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## A Plea for Improvement of the Results of Bowel Cancer Therapy

Victor A. Gilbertsen, M.D.

The treatment of cancer of the bowel constitutes one of the largest problems in cancer therapy today. Although optimism has pervaded this field since Lisfranc's enthusiastic report of the first successful resection of a malignancy of the rectum in 1826, the problem is hardly solved and such optimism would seem quite unwarranted.

Cancer of the large bowel is the most common malignancy that kills both men and women. Last year, in the United States alone, 40,000 people died of this disease.<sup>14</sup> Since well over 90% of the patients who die of bowel cancer are more than 40 years of age, it has been estimated that, if this trend continues, approximately 2,000,000 persons who are alive today in the United States will die of intestinal cancer.

The magnitude of the problem is further illustrated by noting that only a minority of patients who reach a hospital for treatment will achieve a five-year survival (Fig. 1).<sup>5,9</sup> It can be assumed that of those never seen by a physician, few, if any, survive five years.

Furthermore, these modest accomplishments are almost entirely accounted for by the survivors of treatment of

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a small, select group of patients, those with early lesions who are operated on for cure (Fig. 2). About 70-80% of the patients with Dukes A lesions (confined to bowel) can be expected to survive five years postoperatively (Fig. 3). A much smaller percentage of those with tumors with spread to local lymph nodes will achieve similar survival after *curative* excision (Fig. 4).<sup>6</sup> Rarely do patients survive five years after palliative resection (Fig. 5); seldom does a patient who has not undergone resection survive five years (Fig. 6).<sup>4</sup>

The problem of improvement in the results of treatment of bowel cancer is greatly compounded by Pollyanna well-wishers disseminating a philosophy of false optimism. Beginning perhaps with Lisfranc, who predicted in 1833 that "operative results should improve now that early diagnosis is possible and early treatment can be undertaken," pervading medical literature throughout the years, and continuing on to the recent article "A Half Century of Effort to Control Cancer,"<sup>13</sup> perpetuation has occurred of such misleading statements as "survival of patients with rectal cancer has doubled each decade during the past 50 years," "most patients can now be cured," and "improvements in results of treatment have been re-

**Carcinoma of the Colon and Rectum**  
Five-year Survival \*

875 Cases  
1940 to 1950

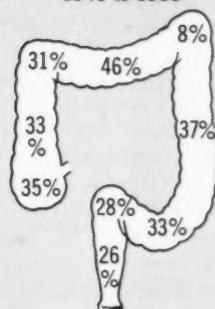


Fig. 1

**Carcinoma of the Rectum**  
Dukes A Lesions \*

Survival following 100 conventional resections  
Jan. 1, 1940 to Jan. 1, 1955

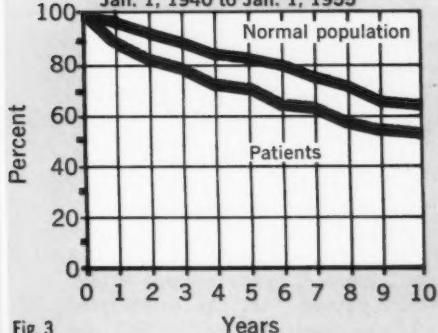


Fig. 3

**Survival Following Palliative Resections and Colostomies \***

Carcinoma of the Rectum and Rectosigmoid  
Jan. 1, 1940 to Jan. 1, 1955

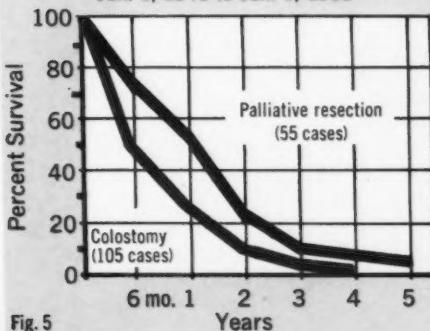


Fig. 5

**Five-year Cure Rates**  
Following Resections for Cure \*

Jan. 1, 1940 thru Dec. 31, 1950

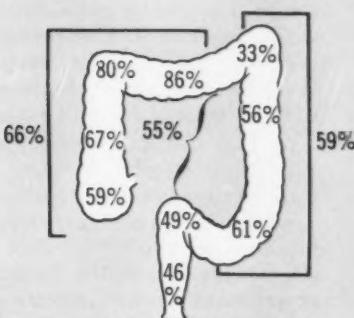


Fig. 2

**Carcinoma of the Rectum**  
Positive Lymph Nodes \*

Survival following 98 conventional resections  
Jan. 1, 1940 to Jan. 1, 1955

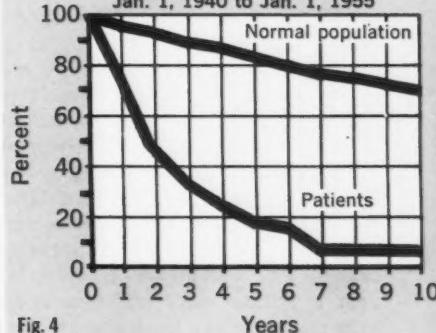


Fig. 4

**Survival Following Palliative Procedures**

Carcinoma of the Colon \*  
(Excluding rectum and rectosigmoid)  
Jan. 1, 1940 to Jan. 1, 1955—114 Cases

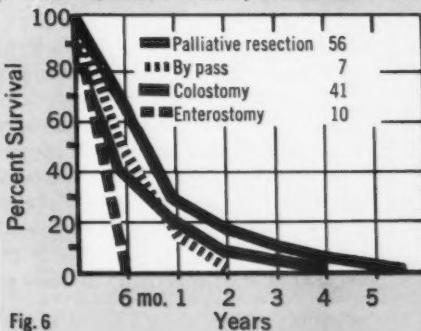


Fig. 6

markable." A great deal of this unwarranted optimism, doubtless, is due to an almost unbelievable emphasis on cases which are selected for "curative surgery." Actually, only a minority of patients with cancer of the bowel ever undergo surgery designed for cure.

Another difficulty stems from confusing "palliation" with "cure." Five-, three-, or even one-year postoperative survivors are sometimes erroneously tabulated as "cures." A failure to follow patients for a sufficiently long time or writing off selected patients as "lost to follow-up" will both tend to lead to this error. In addition, it might well be assumed that the larger and more prominently reported series of patients will show better results than the total of small, unreported groups with this disease. Undoubtedly, this is due in part to the fact that certain experience is necessary to achieve optimal results. Those who operate on only an occasional patient will have higher operative mortality and poorer survival rates; it should be recalled that even Professor Miles lost five of his first 12 patients with operative or early postoperative deaths. The well-known tendency to omit reporting really unfavorable results tends to make the literature even more overly optimistic.

*Why, then, are the results of treatment of bowel cancer so poor?* It has been shown beyond reasonable doubt that the operations currently in vogue in the treatment of this disease are effective for *early* cases and allow the vast majority of these patients to achieve five-year survival. In fact, almost any one of the standard operations—even those employed for the past 75 or 100 years—will produce satisfactory results for patients who are treated early.<sup>8</sup> However, most patients do not come in early in the course of the disease; at least 40% of even those se-

lected cases operated on for cure are found to have spread of the tumor to local lymph nodes when the specimens are examined (Dukes, after meticulous examination of resected specimens, showed that the figure is more likely 70-80%). Thus, the results that are observed after "curative" surgery are unfavorable because the operations employed—while effective for early cases—are being utilized for patients with relatively late disease.

*How, then, to improve these results?* First, it seems imperative that physicians begin recognizing the seriousness of the problem. It must be remembered that the optimistic figures which continue to be published by an increasing number of reporters refer almost entirely to selected cases, and are not over-all results. Furthermore, unless something of a more definitive nature is done than has been accomplished so far, a couple of million people (in the United States alone) who are alive today will die of cancer of the bowel.

Second, it would seem worthwhile to begin correcting the ignorance of both patients and physicians regarding bowel cancer. It is the usual, average, median patient (*not* the exceptional one) who procrastinates a full six months before going to his physician for treatment. *How is this possible?* Some patients are, doubtlessly, ignorant. A few, consciously or not, want to commit suicide. Others consult irregular practitioners and quasi-medical people who employ such fraudulent treatment (usually without benefit of diagnosis) as colonic irrigation, rectal lavage, or spinal adjustment. Other patients appear to be swayed by patent medicine companies which, unobstructedly, advertise their medicines for "sluggish bowels," "troublesome piles," or "loss of pep and vitality." Friends and associates may also dogmatically

**Bleeding in Carcinoma of the Cecum and Rectum \***

Jan. 1, 1940 to Jan. 1, 1955 — 640 cases

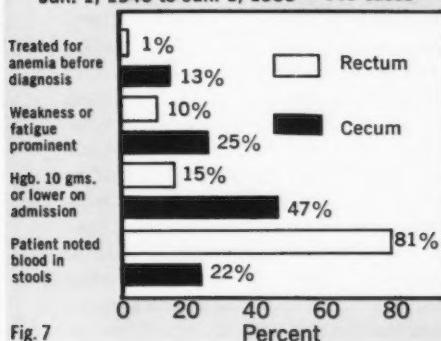


Fig. 7

**Recurrent Cancer \***

Following curative resections for carcinoma of the rectum

125 patients deceased

(op. January 1, 1940-December 31, 1950).

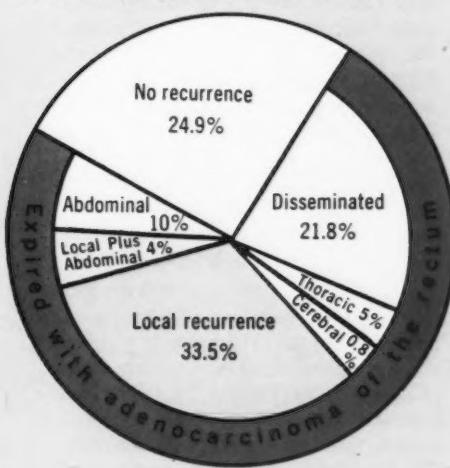


Fig. 8

\*University of Minnesota Hospitals

Table 1

**Prominent Symptoms Associated with Adenocarcinoma of the Rectum\***

Order of Frequency	Symptom	Patients %
1	Blood in stools	81
2	Diarrhea	35
3	Anal area pain	27
4	Constipation	24
5	Abdominal pain	20
6	Ribbon stools	16
7	Alternating constipation and diarrhea	10
8	Rectal incontinence	10
9	Weakness	10

\*University Hospitals, 475 patients

Table 2

**Prominent Symptoms Associated with Adenocarcinoma of the Cecum\***

Order of Frequency	Symptom	Patients %
1	Abdominal pain	69
2	Weakness	25
3	Blood in stools	22
4	Diarrhea	18
5	Constipation	18
6	Anorexia	14
7	Nausea and vomiting	14
8	Anemia (recognized and treated)	13
9	Distention, "bloating," or "gas"	10

\*University Hospitals, 165 patients

Table 3

**Initial Symptoms Associated with Adenocarcinoma of the Cecum\***

Order of Frequency	Symptom	Patients %
1	Abdominal pain	43
2	Change in bowel habits	21
	diarrhea	9
	constipation	9
	alternating constipation and diarrhea	3
3	Weakness	18
4	Distention, "bloating," or "gas"	5
5	Blood in stools	3
6	Anorexia	2.5
7	Anemia (recognized and treated)	2.5
8	Nausea and/or vomiting	2
9	Asymptomatic	2
10	Chills and fever	1

\*University Hospitals, 165 patients

insist that all rectal bleeding is due to hemorrhoids, that persistent, crampy abdominal pain can be blamed on dietary indiscretion, or that all that is needed to cure any trouble whatsoever is an additional amount of faith in some particular paradisaic or miraculous creed (Tables 1, 2 and 3).

Physicians are not exempt from being uninformed. A substantial percentage of patients with cecal cancer seen at this hospital, for example, had been treated by physicians for anemia prior to diagnosis of bowel malignancy (Fig. 7). Other patients had not had a rectal examination because the physician had forgotten to have a glove in his office, had undergone hemorhoidectomy for rectal symptoms before discovery of the rectal cancer, or had an appendectomy or cholecystectomy for bowel symptoms without having had even the most elementary abdominal exploration during the procedure.

In addition, few persons—physicians or patients—are cognizant of the fact that for those patients who undergo resection for cure of rectal cancer, spread even to local lymph nodes changes the possibility of cure from about 70-80% (with Dukes A lesions) to about 10-15%.\* Thus, while the delay of a few days or a couple of weeks may not be significant for most patients, an elapse of several months is likely to allow further spread of tumor with a marked reduction in possibility of cure.

Substantial improvement in the results of therapy for bowel cancer, thus, appears within the realm of possibility, and the potential saving of lives could well be gratifying. Most ideal would be early detection of intestinal cancer, while it is still asymptomatic. This could be accomplished by employing

annual proctoscopic examinations for the detection of rectal lesions.<sup>10</sup> Removal of bowel lesions while they are still benign polyps or while they are asymptomatic should allow the vast majority of patients to escape death from cancer, make the necessity of employment of colostomy a rarity, and greatly improve over-all survival.<sup>15</sup>

A fair solution to the problem, which would actually be much of an improvement over the current status, would allow the majority of patients to be cured; this would depend on patients shortening the currently observed time lag of six months between onset of symptoms and consulting a physician for treatment. In addition, the surgeon could well tailor the extent of the excision for the individual lesion, rather than relying on employment of a "standard" operation for almost every patient with malignancy at a particular site of bowel.

Real disservice and deterioration of progress thus far made, however, could occur rather easily. For example, continued agitation persists in advocating the routine employment of smaller and even less adequate operative procedures. A continuation of wholesale publishing of optimistic statistics pertaining only to a highly selected group of "favorable" cases discourages further progress and allows physicians and public alike to assume that the problem has been in a great measure solved.

The other component of this problem is, of course, devising and employing more satisfactory operations to allow more complete excision of tumors. More adequate surgery should be done on the first or initial operation, however, rather than reserved solely for "delayed secondary re-entry" or for excision of grossly evident recurrent tumor. The areas of deficiency in present-day operations are gradually becoming bet-

\*Recently completed 20-year study with 100% follow-up indicates, for patients operated upon for cure of Dukes C lesions of the true rectum, a 5-year cancer-free survival rate of 8.8%.

ter known (Fig. 8).<sup>1,2,7</sup> It would seem only a matter of time before more satisfactory procedures, at least for rectal cancer, could be introduced, evaluated, and given a long-term trial. It must be emphasized, of course, that "more adequate" operations, for any but early lesions, are almost certain to be followed by additional loss of structure and certain functional disability.

### Summary

The opportunity would appear to exist to double or triple the survival rate for patients with cancer of the bowel—even without revising basic operative procedures and without having to do more radical primary surgery. Accomplishment of this goal, however, necessitates that patients and physicians alike be educated to the early symptoms of cancer of the bowel and that treatment be employed before lesions become further advanced.

More ideal, of course, would be the detection of asymptomatic cancer by routine periodic examination. Poten-

tially, the magnitude of improvement in over-all survival rates would appear to be phenomenal. Reliable evidence exists, for example, that annual proctoscopic examination (followed by removal of any adenomatous polyps found) could almost completely prevent the development of all but the earliest, most favorably treated rectal malignancies and reduce the over-all "failure rate" (presently 70-80%) to 1/10-1/20 of the present figure.

This, then, is a plea for a realistic recognition: that the current results of treatment of cancer of the bowel are poor; that the usual patient is not salvaged, because operations usually employed are effective for "early" lesions rather than "average" lesions; and that treatment of patients, while they yet have either no symptoms or symptoms of short duration, likely will allow many of those patients to be salvaged who are now seemingly destined to die because of ignorance.

These studies were supported, in part, by the Minnesota Division of the American Cancer Society.

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# Preparation and Maintenance of the Patient Receiving Irradiation for Gynecologic Cancer

William E. Crisp, M.D.\* and John C. Ullery, M.D.



William L. Crisp, M.D.

It has been well established that all animals respond to stress by what Selye has defined as the adaptation syndrome. Surgery is a recognized stress, and the value of preoperative preparation for this stress is well documented.<sup>1, 2, 15</sup> What is not so generally appreciated is that ionizing radiation, like surgery, is injurious to biologic media and is, therefore, a stress that likewise requires stamina on the part of the patient. All too often irradiation therapy is planned for the particular neoplasm rather than the individual. We unthinkingly irradiate patients whose general condition proscribes surgery. If effect from irradiation is to be obtained with a minimum of morbidity, our patients must be prepared as meticulously as any candidate for elective surgery. Seldom is radiation an emergency, and time should be allowed for preparation and adequate study of the patient.

## Preparation

Although our experience has been limited to gynecologic cancer, the principles of our regimen apply to all patients receiving radiation therapy from either internal or external emitters.

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One of the most consistent symptoms of cancer is anorexia. It is our belief that the anorexia and subsequent malnutrition associated with cancer are physiologic since numerous investigators<sup>12, 17</sup> have shown that underfeeding retards tumor growth in animals. Pareira and his associates,<sup>13</sup> presented clinical and metabolic evidence to show that cancer cachexia is not due to any specific effects of cancer per se, but to the malnutrition initiated and sustained by this anorexia. Beset by cancer, the patient can not afford the consequence of deficiencies due to under-nutrition.

Paris demonstrated that animals in negative protein balance showed a minimal adaptation response when exposed to irradiation and their tumors were relatively more radioresistant as compared to those animals who were in positive nitrogen balance before therapy began. The radiation syndrome and its clinical manifestations is an additional stress to the cancer patient.

Therefore, before therapy is started, the anorexia-malnutrition cycle must be corrected. Pareira and Elman<sup>12</sup> have shown that this cycle can be broken by hyperalimentation with tube feeding, if necessary. They recommend a caloric intake of 3500 calories a day with a

minimum of 110 grams of protein. The word protein means first or primary, and proteins are still first in the regulation of such vital processes as antibody formation, and maintenance of blood elements. The work of Cannon<sup>2</sup> illustrated the marked effect that protein depletion had on these defense mechanisms. The cancer patient needs approximately three times more protein than the normal intake to bolster the body's defenses. With hyperalimentation, these patients have a return of appetite and gain weight usually within 10 days after the feeding program is started. Clinically they are much improved and they will show a positive protein balance, and a regeneration of hemoglobin. Only in the replacement of serum albumin does the cancer patient show a deficiency.

The positive approach is worthwhile in all patients. We readily concur with Pack, Homberger and others who have emphasized that every patient with cancer is not a patient for cure, but that there is a place for palliation of their disease, whether it be by surgery or irradiation or symptomatic care. All patients will benefit from better nutrition. Those patients who receive full therapy will be better able to adapt to the imposed stress and those patients who are candidates for palliation will definitely improve objectively and subjectively and thus require less hospitalization and nursing care.<sup>8</sup>

What type of diet is best for these patients? For the purposes of this discussion a specific diet will not be outlined but general principles and methods will be cited.

Carsten and Noonan<sup>5</sup> have emphasized the importance of protein in preparing an animal to cope with the radiation stress. Protein metabolism is a continuous and unending process. Protein molecules are not made in excess

of their need by the body, and thus there is no reserve or store of proteins, such as fat depots and glycogen stores for caloric needs. The amino acids are either incorporated into the body protein or they are deaminated and the nitrogen component excreted. When there is a need for a protein molecule, all the amino acids required for its structure must be present simultaneously, or the synthesis of protein is not accomplished. Therefore, orally administered animal protein, which is of high biologic value, is our best source of the amino acids.

Cheng<sup>6,7</sup> has shown that fat is also a very important factor in making animals more resistant to radiation injury. It is believed that the body stores the essential fatty acids in a rather static equilibrium, and calls upon them only when there is an increased demand for them in the formation of new tissue. Since fat cannot, as yet, be readily given parenterally, it is much better given orally.

We, therefore, would prefer a diet high in animal protein and fat, but balanced with a sufficient carbohydrate to make it palatable. Therapeutic quantities of vitamins and minerals are added as necessary catalysts.

Since most patients are at first unable to ingest the necessary food in the desired quantity, a polyethylene tube can be placed in the stomach via the nose and a solution containing hydrolyzed protein, carbohydrates and minerals can be supplied continuously. The commercial solutions containing 65 grams of protein and 900 calories, are preferred because of uniformity and ease of administration.

As soon as the patient's appetite returns she is placed on a special diet high in protein and unsaturated fats.

Positive protein balance is encouraged with parenteral testosterone dur-

ing this period of nutritional build up.

Since the radiosensitivity of most tumors is in direct ratio to their oxygenation, an adequate circulating blood volume and hemoglobin are essential to successful irradiation. Oral iron and small, repeated blood transfusions are given as indicated.

Infection in patients who are being prepared for irradiation is a problem of first importance. All objective signs of infection should be controlled before therapy is started. In addition, prophylactic, broad spectrum antibiotics are used because approximately five days after the onset of therapy, the body loses some of its ability to form antibodies, and hence, becomes prey to microorganisms which were normally saprophytic.

During the period of preirradiation conditioning, the patient is completely evaluated as to the type and extent of her neoplasm.<sup>10</sup> She is then seen in consultation with the Radiation Therapy Department and Tumor Board. Her therapy is individualized in consideration of her particular tumor, her condition and the limiting perimeters of radiation.

### Maintenance

Although the treatment given before therapy is much more effective than that given after therapy has been started, the patient will still have abscopal<sup>\*</sup> effects from her irradiation because all ionizing radiation is injurious. The success of therapeutic irradiation, like surgery, depends on selective injury to various tissues and the ability of the normal tissue to re-establish its physiology.

Some of the common complications encountered during therapy are radiation sickness, anemia, and gastrointes-

tinal and genitourinary disturbances.

The incidence of radiation sickness is directly related to the psychological and physiological preparation of the patient for therapy. The exact biochemical disturbances in this syndrome which are secondary to radiopathologic changes are not completely understood, but they are clinically recognized by nausea and vomiting. This progresses to severe electrolyte disturbances and collapse.

Cantril<sup>3</sup> states that radiation sickness should be recognized as a warning that therapy should be stopped and the plan of therapy reviewed. He believes, as do most therapists, that outside of the general measures of electrolyte and fluid replacement there is no medicinal therapy for radiation sickness. "Radiation sickness can be controlled if attention is given to the volume of tissue irradiated, the dose, and its spacing. Those who control it otherwise or proceed in the face of progressive radiation sickness, severely censor the information which the patient's reaction presents to him, and which should serve as a warning rather than as an annoying complication."<sup>4</sup>

Irradiation depresses the hemopoietic system and the blood profile must be followed closely during therapy. Leukopenia and lymphopenia are noticed first. Regeneration usually follows the completion of therapy, but it will respond more promptly to small doses of cortisone.<sup>5</sup> If the red marrow is depressed, blood replacement is required and the details of therapy in regard to volume, dose and time should be reviewed.

Close clinical observation is necessary to detect the warning symptoms and signs of impending complications. With higher voltage equipment in the treatment of gynecologic cancer, the gastrointestinal tract and the genito-

\*Whole body effects from localized irradiation

urinary system are the limiting factors. Tenesmus is an early warning of rectal reaction. This will progress to bloody mucous diarrhea and irreversible bowel changes if the tolerance dose is exceeded. Frequency and bladder spasm are the prodromal signs of bladder tolerance. "To ignore radiation effects, which are visible either directly or indirectly, or to pass unheeded the signs of approaching tolerance to important structures is to miss the landmarks of radiophysiology. Serious complications can be predicted by attention to known tissue tolerances. Anticipated biologic reactions to irradiation are not in themselves complications. They are our best guide to the degree of radiation injury to both cancer and normal tissues.

To observe them closely is to keep out of major trouble both during and subsequent to irradiation."<sup>4</sup>

### Summary

From animal experimentation and clinical experience, we know that the response to the stress of irradiation will be much better if the patients are properly prepared for this stress.

In the future complications will be further reduced and survival percentages increased as the techniques become more selective and it becomes possible to alter the tumor's environment by making it more radiosensitive, and by being able to maintain the human host in a better state of nutrition and resistance.

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## Tumors of the Heart

John Mead, M.D.

Tumors of the heart are still medical rarities, but no longer mere curiosities.<sup>18</sup> With the introduction of better diagnostic procedures, namely angiography<sup>6,11</sup> and cardiac catheterization,<sup>10</sup> combined with an increase of clinical awareness, more cardiac tumors are being diagnosed antemortem. Once diagnosed, clinical cures through the use of the various heart-lung machines, with or without hypothermia, have been reported with increasing frequency.<sup>4,13,14,15</sup>

Tumors of the heart are best divided into two groups: those that involve the pericardium, and those that involve the heart itself. They may be benign or malignant, primary or secondary. Primary cardiac tumors appear to be somewhat more common in the male and may occur at any age, although there is a slightly higher incidence in the younger age group.<sup>7</sup>

The primary benign tumors of the heart are myxoma, rhabdomyoma, fibroma, lipoma, angioma and teratoma,<sup>7,12</sup> the most common being the myxoma, 75% of which occur in the left atrium. Most myxomas arise from the region of the fossa ovalis.<sup>2</sup>

Primary benign tumors of the peri-



cardium include lipomas, hemangiomas, fibromas, neuromas, teratomas, and myxomas.<sup>7,12</sup>

Sarcoma is the usual primary malignant tumor of the heart and pericardium. It spreads by direct extension and may involve the entire organ, adjacent structures and the spine.<sup>1</sup>

The heart, including the pericardium, may be involved by metastatic spread from primary cancers of the breast, lung, kidney, liver and stomach. Patients with malignant melanoma, lymphoma, Hodgkin's disease and the leukemias may have heart involvement as part of the general manifestations of their disease.

### Signs and Symptoms

The signs and symptoms will vary according to the nature of the tumor, that is, benign or malignant, primary or secondary, as well as the part and amount of the heart involved. An associated condition, e.g., arteriosclerosis of the coronary vessels, may complicate the picture. There may be no symptoms, and the only sign may be a slightly abnormal configuration of the heart shadow on X ray. Signs of right-sided, but not left-sided heart failure may be noted when a tumor involves the tricuspid valve orifice. Frank congestive

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heart failure may be demonstrated. Intermittent attacks of syncope have been noted. There may be signs of constrictive pericarditis;<sup>3</sup> a friction rub may be heard; or findings may be those of pericardial effusion. Various arrhythmias have been described, such as sinus tachycardia, auricular flutter, auricular fibrillation, shifting pacemaker, and first and second degree heart block.<sup>8</sup> Various systolic murmurs have been noted at the apex and along the left sternal border, alone or at times in combination with the murmur that is compatible with that heard in cases of rheumatic mitral stenosis. An opening snap has been reported.<sup>10</sup> Embolic phenomena may occur, and again, symptomatology will be related to the organ involved, e.g., brain, kidney, peripheral vessels, etc.; shock may be an associated phenomenon. Sudden death has been reported.

### Diagnosis

The diagnosis depends on the physician's suspecting that a tumor of the heart or pericardium is the cause of a patient's cardiovascular problem. Points in the clinical management of a patient that should alert the doctor to the possibility of this diagnosis are the following: A significant change in the symptoms,<sup>2,14</sup> e.g., relief of dyspnea; a change in signs, e.g., disappearance of a murmur with the change in the position of the patient; no history of rheumatic fever; the failure of accepted forms of treatment to eliminate or control an arrhythmia, such as auricular fibrillation; the poor response of a patient with congestive heart failure to treatment that is expected to compensate the heart. Proper investigation of all cases of embolus as to the nature of origin, as well as, when possible, microscopic examination of the embolus in an extremity are indicated.<sup>5</sup>

X-ray examination of the chest may show changes in the cardiac silhouette. (Fig. 1.) Congestion in the lung fields may also be noted.

Since the left auricle is the usual site of tumors, barium swallow studies done in the right oblique position may be helpful.

Angiocardiography may demonstrate a space-occupying lesion in the heart and at the same time rule out other causes for the patient's disability.<sup>6</sup> (Figs. 2 and 3.) Angiograms of the peripheral vessels may occasionally be indicated to demonstrate the location and extension of an embolic phenomenon.

Cardiac catheterization is of obvious value;<sup>16</sup> the most important factor is the absence of an abnormal specific pressure gradient that one would expect to find in a person who presented with the classical auscultatory findings of rheumatic mitral stenosis. An abnormal specific pressure gradient would not be demonstrated as well in patients who present with signs of tricuspid stenosis caused by a tumor mechanically occluding the valvular orifice, rather than valvular disease per se as the cause of the difficulty.

The electrocardiogram will establish the type of arrhythmia, if one is present, and may show a nonspecific myocardial abnormality.

The serum enzymes, serum glutamic oxalacetic transaminase, serum glutamic pyruvic transaminase and lactic dehydrogenase, are elevated in some patients with metastatic lesions in the heart. These elevations, by and large, are not as high as those which occur in myocardial infarction. Since patients with disseminated disease have the liver frequently involved and often an associated arteriosclerosis of the coronary arteries, the interpretation of these enzymatic changes is quite difficult. We must therefore conclude



Fig. 1. Standard posteroanterior view of the chest in a patient with myxoma of the left auricle. Prominent pulmonary artery as well as a straightening of the left auricular border are noted.

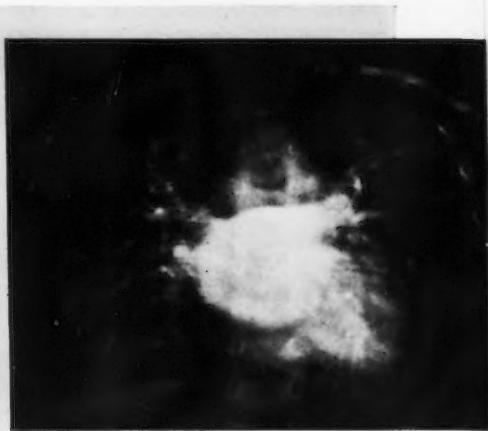


Fig. 2. Angiocardiogram demonstrating a filling defect (tumor) in the left auricle. Same case as Fig. 1.

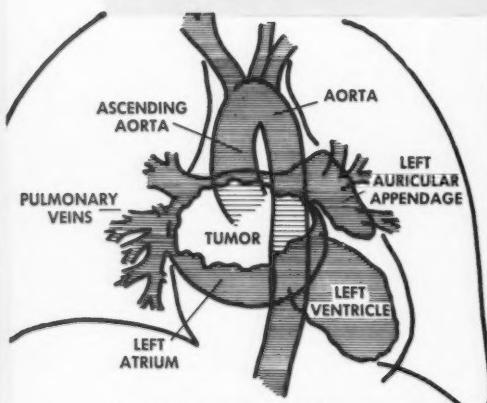


Fig. 3. Diagrammatic representation of a filling defect (tumor) as in Fig. 2.

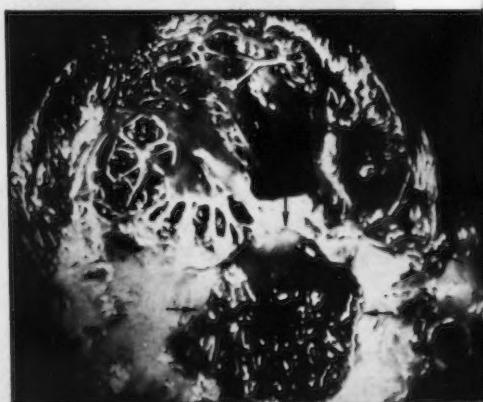


Fig. 4. Autopsy specimen obtained from same case as Fig. 1. Arrows indicate tumor.

Courtesy of Israel Steinberg, M.D.

that these changes are nonspecific.<sup>17</sup>

Following successful surgical treatment of tumors of the heart, any abnormalities that may have been noted in the various preoperative procedures will disappear and all follow-up studies will be normal, provided no associated heart disease accounted in part for the abnormal findings preoperatively.

#### Treatment

Before the definitive diagnosis has been made, acceptable methods of treatment are indicated as to the types of cardiac state that exist. In congestive heart failure, digitalization, a low salt diet and appropriate diuretics are in order. Whenever a patient with rapid auricular fibrillation is seen, one must either attempt to slow the ventricular rate to below 90, or to convert the auricular fibrillation to a normal sinus rhythm. In most patients with auricular fibrillation the possibility of an embolic phenomenon must be borne in mind, regardless of the etiology of the underlying heart disease. The risk of an embolus increases in patients with auricular fibrillation who are undergoing an attempt to convert them to a normal sinus rhythm. Hence, anticoagulants are indicated, prior to and during the conversion procedure. If an embolus should occur, thrombosis at the site will follow. The risk of a patient suddenly dying, developing a hemiplegia, or a gangrenous extremity is the more ominous reason for anti-coagulation.

Once the diagnosis of a primary tumor has been established and there are no obvious medical contraindications, open-heart surgery, with or without hypothermia, is indicated and, if feasible, the tumor is removed. Since the cardiovascular problems, including thrombo-embolic phenomena, are due to the obstruction by a foreign body, i.e.,

a tumor in the heart cavity, there is no other definitive treatment. Successful surgical treatment should eliminate both the cardiac problem and the danger of future thrombo-embolic episodes.

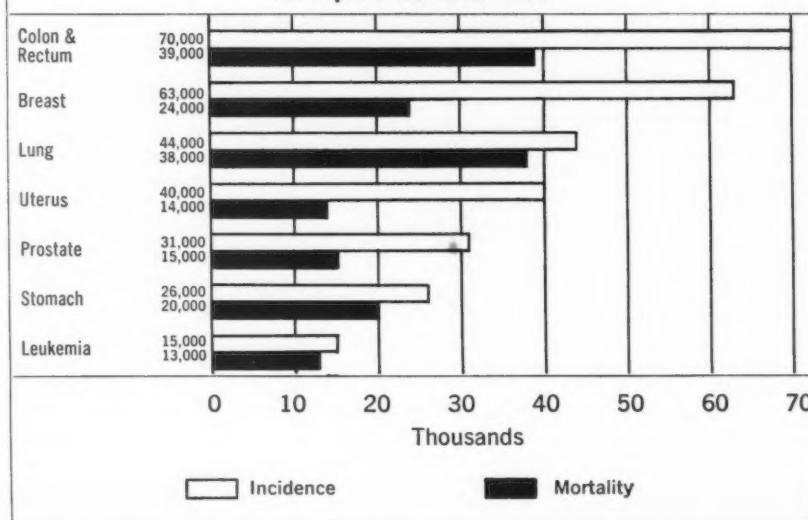
Metastatic disease of the heart requires treatment in two areas, the first being directed towards the cardiac problem. There is usually no difference between treatment of the cardiac arrhythmias and/or congestive heart failure caused by metastatic disease from those caused by other forms of heart disease. Yet one exception is pericardial tamponade, caused by malignant disease. When clinically indicated by patient distress, an attempt should be made to remove the fluid from the pericardial sac and, by so doing, remove the mechanical effects. At the same time, the instillation into the pericardial sac of radioactive gold, nitrogen mustards and CrP<sup>32</sup>O<sup>4</sup> might be done.<sup>9</sup> It is hoped that this will prevent recurrence of cardiac tamponade.

The other area of treatment is directed toward the underlying cancer. In certain clinical conditions, such as the lymphomas and leukemias, treatment with cancer chemotherapeutic agents, i.e., polyfunctional alkylating agents, antimetabolites, steroids, alone or in combination with radiation, as well as the use of other supportive measures, e.g., oxygen, blood, have resulted in remarkable general improvement in some patients.<sup>9</sup> Associated with this, an improvement in cardiac function, if the heart has been involved by the malignant process, may also occur. Along with the patient's improved physical functioning may be demonstrable changes in the chest X ray and electrocardiogram. Prognostically this is important since one could mistakenly attribute the cardiac involvement to an associated heart disease, and the treatment might be less heroic.

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**Estimated Cancer Deaths and New Cases by Principal Sites. U. S. 1961**



# National Survey of Cytologic Facilities

## A Special Report

Daniel Horn, Ph.D. and Annabelle Siegel, B.B.A.

Since the most recent data on facilities for evaluating vaginal cytology are about three and one-half years old, a new survey of such facilities was conducted by the American Cancer Society to bring these figures up to date.

A brief questionnaire was designed and approved by the Board of Governors of the College of American Pathologists and by the joint committee on cytology of the College and of the American Society of Clinical Pathologists headed by Dr. John R. McDonald. Out of 3,535 pathologists queried by mail, 2,931 (83%) replied. The following report, based on these 2,931 replies, was accomplished after two mailings on Dec. 16, 1960 and Jan. 11, 1961.

The following estimates include an allowance for the few pathologists who do vaginal cytology but did not answer the questionnaire. It is unlikely that final figures based on complete returns would vary more than 3 or 4 per cent from the ones given here.

Female genital cytologic smears were analyzed for approximately 5,100,000 women in the United States in 1960, in about 1,700 different laboratories. According to present plans, pathologists expect to be able to handle 6,100,000 cases in 1961, an increase of 1,000,000, or about 20%. In answer to the question of the potential expansion in 1961, "Should there be a sharp increase in public demand for this test," they indicated that capacity could be about doubled — to 11,000,000 — with about one half of the pathologists indicating

willingness to expand their facilities substantially under these conditions. This doubling, however, is predicated on demand and would require additional personnel in most cases — a total across the country of about 200 additional pathologists\* and about 1,100 additional cytotechnicians.

At the present time there are over 1,300 cytotechnicians employed in over 800 laboratories. There are presently about 350 openings for additional cytotechnicians, and pathologists would like to absorb an additional 310 by July 1, 1961, and another 520 by the end of the year, if demand warrants.

According to our best estimates from two studies made in 1956 and 1957 by the College of American Pathologists, the rate of growth of female genital cytology has been as follows: 1.0 million cases in 1955; 1.6 million cases in 1956; 2.2 million cases in 1957; and 5.1 million cases in 1960.

Current plans of pathologists allow for an additional growth of 20%, or 1.0 million cases in 1961. Therefore, looking at the nation as a whole, facilities are not readily available for increasing cytological usage very much beyond what is taking place already. However, a willingness to expand is expressed by enough pathologists to allow for a very rapid increase in facilities, provided the logistics of the problem can be worked out to permit the necessary balance between demand and the training and hiring of personnel needed for this

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\*More than 350 pathologists are currently being certified each year and all of these have met certain minimum requirements in cytodiagnosis.

**TABLE I**  
**Report of Cytologic Facility Survey by American Cancer Society Divisions as of January, 1961**

Division	Patholo-gists in Survey Area	% of Patholo-gists in Survey	Laborato ries Report-ing Forms	Cases Done In 1960	Estimated Cases Prepared To Do In 1961	Maximum Expansion Potential For 1961 If Warranted	Personnel Needs For Maximum Expansion-Cyto-patho-gists	Present Number of Cyto-patho-nicians	Would Like To Employ Following Number Of Cyto-technicians	In Next 6 Mos.	In Follow-ing 6 Mos.
Alabama	26	88%	14	43,033	56,700	108,500	1	11	14	3	4
Alaska	1	100	1	1,025	1,500	4,500	0	1	0	0	1
Arizona	23	87	10	55,116	60,800	97,348	1	4	14	0	1
Arkansas	19	74	9	9,400	12,580	18,175	0	3	2	1	2
California	345	83	151	656,736	775,829	1,439,524	25	112	131	30	49
Colorado	57	77	23	73,003	89,995	172,700	3	20	18	3	5
Connecticut	55	85	21	78,730	91,801	131,709	1	15	32	4	3
Delaware	17	71	5	11,500	12,100	20,664	0	1	0	0	1
Dist. of Col.	72	78	17	60,670	72,200	137,735	4	13	13	6	2
Florida	108	85	44	176,037	210,127	365,608	6	33	38	10	6
Georgia	56	82	28	148,375	187,372	316,730	4	20	19	3	11
Hawaii	8	88	4	4,428	44,080	87,427	0	2	5	0	1
Idaho	10	90	7	9,444	11,389	24,473	0	4	1	0	3
Illinois	213	80	91	163,613	192,965	369,729	17	51	54	17	24
Indiana	83	92	38	92,274	105,932	203,726	3	22	24	3	7
Iowa	43	95	22	53,506	64,080	126,748	1	10	13	1	3
Kansas	32	81	14	21,833	26,971	73,372	0	7	8	2	1
Kentucky	32	91	20	62,266	77,466	162,513	3	24	20	9	5
Louisiana	68	76	26	34,232	52,129	111,960	3	21	7	7	11
Maine	14	86	9	26,200	29,100	79,800	1	11	6	4	1
Maryland	91	88	27	95,075	112,135	199,700	4	27	36	12	6
Massachusetts	116	85	49	97,023	109,859	193,250	6	24	42	9	10
Michigan*	73	82	35	86,272	107,777	172,838	3	15	25	7	12
Milwaukee	35	91	11	38,655	43,055	77,292	0	8	8	4	1
Minnesota	70	89	26	115,455	131,225	181,450	1	10	19	2	6
Mississippi	23	91	12	18,902	25,263	46,356	0	5	7	0	1
Missouri	83	81	35	143,463	171,849	322,829	4	29	26	9	13
Montana	9	89	8	10,017	13,412	24,200	1	5	3	4	0
Nassau	19	68	10	8,735	10,059	25,287	3	9	5	3	4
Nebraska	31	87	14	24,825	29,575	86,800	7	7	7	3	3
Nevada	60	2	5,850	7,000	11,500	5	2	1	1	0	0

3  
2  
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/

86,890

	24,823	29,575	86,890
Nebraska			
Nevada	5		
New Hampshire	60	2	
New Jersey	87	7	
New Mexico	112	66	
New York City**	178	70	
New York State***	116	89	
North Carolina	60	92	
North Dakota	7	43	2
Ohio	170	83	81
Oklahoma	29	76	14
Oregon	36	86	16
Pennsylvania†	174	76	87
Philadelphia	96	88	38
Queens	26	77	11
Rhode Island	15	73	6
South Carolina	22	77	9
South Dakota	13	92	9
S.E. Michigan	74	81	31
Staten Island	4	25	1
Suffolk	15	73	8
Tennessee	69	84	27
Texas	181	89	83
Utah	16	94	9
Vermont	11	100	6
Virginia	57	81	29
Washington	53	91	30
Westchester	24	79	10
West Virginia	33	94	21
Wisconsin†	51	80	27
Wyoming	4	100	3
Adjusted Total—	3,534	83	1,576
U.S.†††			
			5,100,000
			6,100,000
			11,000,000
			200
			1100
			1340
			350
			310
			520

\* Michigan, excluding S.E. Michigan Division.

\*\* New York City (Manhattan, Bronx, and Brooklyn) excluding Queens and Staten Island Divisions.

\*\*\* New York State excluding New York City, Queens, Staten Island, Westchester, Nassau and Suffolk Divisions.

† Pennsylvania excluding Philadelphia Division.

†† Wisconsin excluding Milwaukee Division.

††† Adjusted Total—U.S. includes some reports from military installations overseas, and an adjustment of approximately 10% to allow for the nonrespondents.

expansion. The most encouraging aspect of this part of the problem is the large number of pathologists who are apparently not only willing, but eager to expand when it becomes desirable and practicable to do so.

This summary portrays the cytology situation nationally. As might be expected, there are variations in the potential for expansion in different parts

of the country. Fortunately, the number of returns of questionnaires was so very high that similar statistics have been prepared for each American Cancer Society Division; these returns indicate the potential for expansion and the number of cytotechnicians needed for expansion in the various states. They are summarized in Table 1 on pages 98 and 99.

## Uterine Cancer and Cytology: a Statement

**John R. McDonald, M.D.,\* and Frank C. Coleman, M.D.\*\***

Many authorities agree that, if cervical smears were performed regularly on all adult women, cancer of the cervix uteri as a cause of death could be eliminated. Thus, it becomes imperative that the technique of taking cervical smears be learned by all physicians. It has been stated that 20 per cent of women who visit a doctor asking to have a Papanicolaou smear are discouraged from having it done.

Why this apathy? It is probable that some physicians have not familiarized themselves with the technique of the procedure, even though it is quite simple. The procedure is best performed by a physician in the office or the hospital. It is most important that he examine the uterus for gross abnormalities at the same time. Smears are made even if no abnormalities are noted. The smear itself is very simply collected and there is no necessity for referring a patient to a cancer center to have this procedure done.

The cervix should be visualized without the use of a lubricant. The specimen from the cervix, particularly in the region of the internal os, may be collected by means of a swab, wooden spatula or tongue blade. The material is spread in a thin film on a glass slide and before drying is immediately immersed in an alcohol-ether solution. A brochure describing the procedure for taking and handling cervical smears may be obtained from your Division of the American Cancer Society. Its title is "Cytology and Cancer of the Cervix." A medical film entitled "Pelvic Examination and the Cytologic Method" is also available.

The interpretation of cervical smears is a laboratory procedure which is best done by a local pathologist. The pathologist is then available for consultation regarding the interpretation of the findings, the possible desirability for repeat smears, the method of biopsy, and further treatment if the smear is positive. This consultation is not available with "mail order" cytology.

In a survey recently conducted by the College of American Pathologists and the American Cancer Society, cervical smears of 5.8 million women in the United States were examined by pathologists in 1960. This represents about 10 per cent of the women in the country in the age group that should be examined. Facilities for examination of Pap smears by pathologists are generally available now and are expanding.

\*Chairman, Exfoliative Cytology Committee, College of American Pathologists.

\*\*President, College of American Pathologists.

## Epidemiology of Cancer of the Cervix\*

Epidemiological research, which proved of great value in unravelling the pathogenesis of communicable disease, has recently been directed increasingly toward studies of non-communicable disorders. It has been clear since Pott's observations on chimney sweep cancer that environmental factors can markedly influence the development of certain cancers, particularly those of epidermoid type. In the absence of specific stimuli these cancers, e.g., cancer of the cervix, occur but rarely. The rarity of cervical cancer among virginal women has clearly incriminated a factor associated with married life. The study by Terris and Oalmann in this issue of the *Journal*, p. 1847, in agreement with previous investigations, makes the important observation that cervical cancer is not promoted by pregnancy but rather by a factor associated with coitus itself. The authors find a number of variables, such as early and more frequent coitus, multiple sexual partners, multiple marriages, and non-use of contraceptives, more common among the cervical cancer group than among matched controls. One difficulty of such investigations is to separate interrelated factors; it is virtually impossible to analyze them separately. In turn, it is conceivable that they are related to yet another factor. The authors found lack of circumcision more common in the study group, but were unwilling to draw conclusions because of the number of unknowns. The difficulty in obtaining reliable answers regarding the circumcision status of husbands even when personally examined, has recently

been reviewed.<sup>1-4</sup> Thus, a careful evaluation of the epidemiological pattern of the disease may best elucidate the etiology of cervical cancer.

Studies in Israel and of Jewish women in the United States show exceedingly low rates of cervical cancer. The incidence of cancer of the cervix in American white women is 35.2 and in American non-white women 61.2, according to a 10-city survey.<sup>5</sup> Among women in most Latin and South American countries and Hindu women in India, cancer of the cervix accounts for about 40% of all female cancers. In contrast, the rate for women in Israel is 2.2—a fact generally known, although its significance is not fully appreciated.<sup>6</sup> Surveys revealed no outstanding difference between Jewish and non-Jewish women to account for this fact except circumcision.<sup>6-8</sup> Racial factors are thus not likely to account for these findings. Similarly, studies in India showed that only circumcision, as practiced by Moslems, can account for their lower incidence of cervical cancer as compared with Hindus.<sup>7</sup> To this evidence is added the fact that penile cancer is exceedingly rare among males circumcised in boyhood and that the relative incidence of penile cancer parallels that of cervical cancer among different population groups. Furthermore, studies in this country and in India have indicated that groups with the highest rate of cervical cancer have relatively the poorest penile hygiene among their male population.<sup>7,9</sup> In addition, human smegma has been shown to be carcinogenic to mouse cervix.<sup>10</sup>

Having established the fact that coitus is related to the development of cervical cancer, one needs to determine whether this is a result of coitus as

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such, the introduction of semen, or of material associated with poor penile hygiene. The first two possibilities are ruled out in view of the low Jewish and Moslem rates of cervical cancer; this leaves the smegmatic material found in males with poor penile hygiene. Increased exposure to smegma is the most likely common denominator among women with early and more frequent coitus, more sexual partners, more marriages, and less use of contraceptives.

The function of epidemiology is not merely to gather data but to try to interpret them in the line of the most reasonable explanation. Practical preventive medicine gains little by discussing such factors as early and frequent intercourse. However, if it can be established that circumcision and/or improved penile hygiene can lead to a reduction of cervical cancer, a practical advance will have been made.

The time and extent of action depends on the degree of the evidence, prevalence of the disease, the magnitude of the factor, as well as the practicability of the preventive measures. To follow the incidence of cervical cancer in the United States, where during the past 15 to 20 years circumcision has been routinely practiced in about 80% of deliveries in many hospitals, repre-

sents another possible, though time-consuming, step. One might predict that the incidence of cervical cancer will steadily decrease as this generation grows into adulthood. Additional data as to the mechanism of smegma carcinogenesis could come from chemical studies of this material. Though additional studies should be encouraged, we must ask ourselves whether present evidence relating poor penile hygiene to cervical cancer is yet strong enough to demand preventive action.

The epidemiological pattern of this disease, together with the most reasonable interpretation of data available, suggests that with general circumcision the incidence of cervical cancer among the general population would parallel that of Jewish women. Though good penile hygiene could achieve the same end, infant circumcision, especially among the lower income groups, could accomplish this in a more practical and thorough fashion. Of course, for mature males education leading to improved penile hygiene will have to suffice. The challenge presented by a common cancer is great. The frequency of cervical cancer and the chance drastically to reduce its incidence by practical means demands that we give this problem our prompt attention.

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# The Cancer Detection Examination\*

Emerson Day, M.D.

More than 250,000 Americans will die of cancer in 1960. It is conservatively estimated that over 65,000 of these deaths could have been prevented if the cancers had been diagnosed and treated at the localized stage of disease.

All cancer that arises in a primary focus must, by definition, pass through a stage when it is localized in the tissue of origin. At this stage most cancers can be completely removed, and thus cured, by surgery or radiation therapy. The key to success is the discovery of cancer while it is still in this favorable stage.

Localized cancer is usually small and characteristically does not produce symptoms. It also is not associated with biochemical or serologic changes which are useful, as yet at least, for a general "cancer test." Therefore, the only method of detecting cancer in the most favorable stage for cure is *periodic examination of the asymptomatic adult*.

The basic components of a cancer detection examination are readily adaptable to private office practice. The equipment is simple. The techniques of examination are easily learned. The most important investment is professional time and the most important tool the conviction that cancer detection is both feasible and worthwhile.

The cancer detection examination

will be outlined with emphasis on necessary equipment and techniques, and the selection of higher risk patients.

## History

**FAMILY.** A reliable record of the known cases of cancer in a patient's family is important, though oftentimes difficult to obtain. Ideally, one should record data in regard to siblings, parents, aunts, uncles and grandparents.

Studies have shown that those patients with a strong family history of cancer or precancer should be periodically and carefully evaluated.

**ENVIRONMENT.** Information should be obtained as to major places of residence, i.e., whether rural or urban; occupational exposures to known carcinogens — petroleum products, aniline dyes, chromate, nickel, asbestos or unusual sources of radioactivity; and habits of diet, drinking and particularly cigarette smoking.

Patients with a history of smoking 20 or more cigarettes daily for over 20 years, or of extensive exposure to the known carcinogens listed above, deserve special surveillance of the respiratory and urinary tracts.

**MEDICAL HISTORY AND REVIEW OF SYSTEMS.** Data should be obtained regarding illnesses, operations, x-ray or hormone therapy. For women, the history should also include a record of menstrual, obstetric and nursing data. The status of circumcision of the husband should also be recorded.

A careful review of systems is essential even in the so-called well adult who comes for a cancer check-up. Occasionally, significant abnormalities are uncovered which have been disregarded by the patient. Slight changes from normal, such as a low-grade cough or alteration in digestive or bowel patterns, may prove to be important diagnostic leads. Patients who have had ex-

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tensive x-ray therapy for acne, hirsutism, etc., have a much higher risk of skin cancer. This or thymic irradiation may also be a significant lead to thyroid cancer. Menstrual abnormality, infertility and obesity might provide the clue to diagnosis of endometrial carcinoma.

### Physical examination

The physical examination for cancer detection depends upon thorough inspection and palpation of all accessible sites and the use of a few simple aids. The examination procedure, which should be systematized for maximum efficiency, may be incorporated in general examinations performed for other purposes. Only those features relating to the major sites for cancer detection will be outlined here.

**SKIN.** Careful inspection and palpation of all areas of the skin surface should be accomplished. Particular attention should be directed to:

1. The sun-exposed surfaces
2. The genitalia
3. Areas subjected to repeated trauma, i.e., shaving area, belt line, etc.

All suspicious lesions in these areas require excisional biopsy. Only the microscope can determine the differential diagnosis.

**HEAD AND NECK.** Good lighting is essential. This is best provided by the headlamp with electric bulb. Sequence of examination:

1. Inspect the skin, lips and oronasopharyngeal cavity.
2. Palpate the accessible portions of the oral cavity and base of tongue. This is best accomplished by the forefinger covered by a finger cot.
3. Visualize the hypopharynx and vocal cords with a laryngeal mirror. This can be done without topical anesthesia in the majority of patients.
4. Carefully palpate the cervical and supraclavicular lymph node-bearing

areas. The finding of adenopathy in an adult, when infection has been ruled out, denotes carcinoma until proved otherwise. It is important to search thoroughly for a primary lesion before contemplating biopsy of the lymph node.

5. Palpate the thyroid gland. This can be done anteriorly or posteriorly or from both positions. Examination must include both lobes and isthmus. Our experience, where the policy is to advise removal of all thyroid nodules, demonstrates that even those nodules which give a clinical impression of benign adenoma are associated with carcinoma at operation in a significant number of cases.

**BREAST.** With patient sitting facing the physician:

1. Inspect the breasts with
  - (a) arms relaxed at side
  - (b) arms raised
  - (c) pectoral muscles tensed
  - (d) patient leaning forward.
2. Palpate the pectoral areas and axillae.

With patient supine, arm raised and shoulder slightly elevated:

1. Palpate the breast tissue. All quadrants should be palpated methodically using gentle pressure of the flat of the fingers.
2. Pay particular attention to the subareolar tissue and nipples. Any yellow, dark or serous nipple discharge should be cytologically examined.

**Breast self-examination.** The teaching of this technique to the educated patient can be one of the most effective means of improving early diagnosis of breast tumors.

**LUNGS.** Clinical examination of the lungs is not generally rewarding. Occasionally, however, the failure of a pulmonary segment to aerate normally, a unilateral wheeze or an unresolving pneumonia is the first evidence of a bronchial neoplasm.

All patients with a long-term history of heavy cigarette smoking and "cigarette cough" should have cytologic examination of sputum if a specimen can be produced.

**ABDOMEN.** Careful palpation of the abdomen may reveal a visceral enlargement or an intra-abdominal mass as the first evidence of a tumor which is still at a curable stage.

**FEMALE GENITALIA.** Examination for early cancer and its precursors requires thorough pelvic examination and the taking of vaginal-cervical smears. Suggested routine:

1. Inspect external genitalia, paying particular attention to the introitus, skin, mucous membranes, glands and urethra.

2. Take vaginal smear. Aspirate posterior and lateral fornices with vaginal pipette. Spread secretion on glass slide and place immediately in bottle of fixative (equal parts ether and 95% alcohol).

3. Insert speculum, without lubricant, and inspect vagina and cervix in good light. Note if vaginal discharge is present.

4. Take cervical smear. Using cotton applicator, swab entire surface of cervix, then insert and rotate inside cervical os. Roll applicator on slide and place immediately in same bottle of fixative.

5. Perform iodine test. With cotton applicator, apply tincture of iodine to cervix. Note nonstaining areas. Caution: Do not use iodine if patient has a history of iodine sensitivity.

- Routine at Strang Clinic is 3½% tincture specially prepared in pharmacy. The Gynecologic Consultation Service uses Strong Iodine Tincture N.F., which is approximately 7% iodine.

6. Biopsy any suspicious areas using punch forceps.

7. Always include bimanual examination. Palpate pelvic organs, including fornices and adnexa as well as cervix and fundus. A combined rectovaginal examination should also be performed.

#### MALE GENITALIA AND PROSTATE:

1. Assure thorough inspection and palpation of the external male genitalia including scrotum and its contents. In uncircumcised males, it is important to retract the foreskin for adequate examination of the *glans*.

2. Careful digital rectal examination is the primary means of detecting early prostatic carcinoma. While the malignant lesion is classically described as stony hard, it may be present only as an area of altered, not necessarily firm, consistency. After age 50 any localized change, contrasting to the characteristic diffuse enlargement of benign hyperplasia, should be pursued to a diagnosis by cytologic smear, direct biopsy or both.

**RECTUM AND COLON.** The rectum and distal colon are ideal sites for detection of cancer and its precursors if one makes a habit of thorough rectal examination and proctosigmoidoscopy. Suggested routine:

1. Inspect the perianal skin.

2. Perform digital examination of the rectum using bidigital technique for palpation of the perianal tissues. Include palpation of the presacral area.

3. Proctosigmoidoscopy is the most important procedure in the examination of the rectum and colon. In our experience, over 80 per cent of the detected lesions could have been discovered only by this technique. A clean bowel is essential for proper examination.

- a. Patient should be placed in knee-chest or lateral decubitus position.

- b. The lubricated sigmoidoscope is

introduced slowly in the axis of the anus canal.

c. The obturator is removed and the instrument is advanced under direct vision.

d. During introduction, emphasis is placed on gentle progression rather than bowel inspection. Introduction to the full length of the instrument should be obtained in 85 to 90 per cent of cases.

e. Detailed examination is performed while withdrawing the instrument in rotary fashion. Insufflation may be used to flatten the folds and promote visualization of the entire mucosa.

4. In the case of findings of hyperplasia, adenomas, blood or mucus, a barium enema with air contrast is indicated.

#### Laboratory studies

The laboratory tests performed routinely on periodic examination vary from program to program. Those suggested for cancer screening are:

1. Hemoglobin or hematocrit.
2. Total and differential white blood cell counts.
3. Urinalysis with microscopic ex-

amination of the centrifuged sediment.

4. Radiographic examination of the lungs by minifilm or standard 14" x 17" film. Fluoroscopy is not acceptable since it is not as reliable and does not provide a record for future comparison.

5. Tubeless gastric test for achlorhydria (Diagnex® Blue) is recommended for all patients over age 50 as a screening test to select those who should have gastrointestinal x-ray studies.

6. Guaiac test for occult blood in the stool. In the case of a positive test, a repeat study after a three-day meat-free diet should be performed before undertaking a diagnostic work-up.

#### Results

The results of cancer detection examinations of the scope outlined above will vary with the nature of the population examined, i.e., age, sex, race, religion, personal habits, etc. As a rough guide, a yield of 1 cancer and 12 precancerous conditions can be expected in every 100 patients examined. In addition, some 20 to 25 per cent of examinees will be found to have conditions not related to neoplastic disease but of importance in total adult preventive medicine.



# Unproven Methods of Cancer Treatment

## THE GERSON METHOD

*The following statement was recently distributed to the 60 Divisions of the American Cancer Society for their information.*

The method of treatment of cancer and other diseases proposed by Max B. Gerson, M.D., and used during his lifetime in his sanatorium near New York City, is essentially that of diet. The principal ingredients stressed are liver, vitamins and fresh vegetables and fruit juices. Food is not to be prepared in aluminum utensils; glass utensils are preferred. Vegetables are chopped up and made into juices by means of special chopping and juicing machines offered to patients for sale at around \$150.00. Frequent and copious enemas, including coffee enemas, are also used. While Dr. Gerson was alive, patients were usually treated as inpatients at the sanatorium and allowed to return to their homes under treatment when Dr. Gerson thought their conditions permitted their so doing. They were taught to give their own injections of liver at home and he advocated that the treatment be continued for a period of one year.

Dr. Gerson came to this country from Austria in the late 1930's. His work in the treatment of cancer by dietary methods had previously been used in Austria and Germany for the management of both cancer and tuberculosis. From 1946 to 1950, he used this treatment at the Gotham Hospital in New York City until, during the latter year, his affiliation with that hospital was terminated. Dr. Gerson died of pneumonia March 8, 1959. During his lifetime he maintained an office in his home at 815 Park Avenue in New York City, and a nursing home, Oakland

Manor, at Nanuet, New York. The latter was closed just prior to his death. On March 4, 1958, a year before his death, Dr. Gerson was suspended from the New York County Medical Society for a two year period.

Information in our files indicates that the Gerson method is being used to treat cancer by Bernard Jensen, D.C., at the Hidden Valley Health Ranch, Escondido, California. A report in February 1960 stated that an unnamed doctor, whose address could be obtained from the Foundation for Cancer Treatment, Inc., 80-24 Austin Street, Kew Gardens, New York, had taken up the Gerson method and was using it in his practice. Other doctors interested in this method were urged to get in touch with the Foundation.

In May, 1958, a book, *A Cancer Therapy: Results of Fifty Cases*, by Max Gerson, 402 pp., \$8.50, was published by Whittier Books, New York, New York. Among the acknowledgments in this book, Dr. Gerson referred to the Foundation for Cancer Treatment, Inc., as "a nonprofit organization formed many years ago by grateful patients for the purpose of perpetuating the treatment." Prior to Dr. Gerson's death, its principal activity was distributing literature about the Gerson method. In the report mentioned above, this Foundation, in addition to seeking doctors willing to use the Gerson method, offered Dr. Gerson's book at a reduced price to libraries in cities and colleges, and to physicians and patients who might wish to use the treatment.

In 1947, a Committee of the New York County Medical Society reviewed Dr. Gerson's work thoroughly, including the study of histories of patients who were said to have benefited by the treatment. This study failed to disclose any scientific evidence of objective improvement in patients which could be attributed to Dr. Gerson's treatment.

The Gerson method has changed only slightly over the years, and is de-

scribed in detail in two issues of the *Journal of the American Medical Association*. [J.A.M.A. 132:645-646, 1946, and J.A.M.A. 139: 93-98, 1949.—ED.]

After careful study of the literature and other information available to it, the American Cancer Society has found no acceptable evidence that treatment with the Gerson method results in any objective benefit in the treatment of cancer in humans.

### Pulmonary Cancer and the Central Nervous System

The predilection of pulmonary cancer to metastasize to the brain is well known but is not understood. Cerebral metastases cause a variety of syndromes, depending on their location and size and on their interference with cerebral circulation and cerebrospinal-fluid dynamics, etc. In addition, carcinoma of the lung may produce several different types of neurologic disorders even when metastases are absent. (Similar neurologic syndromes may occur in association with other types of carcinoma, as of the breast or ovary, but their incidence in pulmonary carcinoma is very much higher.)

The neurologic syndromes that occur in bronchiogenic carcinoma may be specific in type, as in sensory neuropathy and subacute cortical cerebellar degeneration. They may approach specificity, as in the curious types of mixed peripheral and cranial neuritis that may occur. Again, they may be completely nonspecific, as in the polyneuritis and the myopathy that are sometimes found. In addition, certain mental syndromes have been observed; these may occur either with or without other evidences of central-nervous-system disease, and may become apparent weeks or months before the patient or even the physician knows that the patient has a cancer. Occasional patients with unsuspected lung carcinoma may develop severe anxiety. (Physicians should always be suspicious of anxiety that first becomes a problem after the age of 40, except in cases of menopause or other hormonal disorders.) Other patients exhibit unexplained euphoria or deep depression. The most common type of mental change appears to be a confusional psychosis that may progress to mental deterioration.

The causes of all these central-nervous-system syndromes (in the absence of brain metastases) are unknown. In some instances the cause might perhaps be hepatic failure due to extensive hepatic metastases. However, this explanation is clearly not valid in a majority of the cases. The neurologic lesions found in the patients with nonmetastatic central-nervous-system disease associated with pulmonary cancer closely resemble the lesions produced by vitamin B<sub>6</sub> deficiency. This finding led Denny-Brown to suggest that bronchiogenic carcinomas secrete some substance that interferes with the utilization of vitamin B<sub>6</sub>. If this idea is valid, the use of massive doses of the vitamin may perhaps serve to distinguish this type of brain disease from that due to damage done by metastases in the brain.

—Reprinted by permission of *Medical Science* 8:753-754, Dec. 10, 1960.

## A Perspective in Pathology

*The editor interviews Daniel Roth, M.D., who is Director of Laboratories, Bergen Pines County Hospital, Paramus, New Jersey, and Visiting Pathologist, Cancer Teaching Service, New York University School of Medicine, New York, N. Y.*

**DR. GRANT:** *Dr. Roth, you have recently written about the changing status of hospital laboratories and pathologists. What's going on?*

**DR. ROTH:** A rapid growth of clinical pathology is taking place to the extent that this aspect of pathology is overshadowing anatomic pathology.

**DR. GRANT:** *How is this affecting the pathologist?*

**DR. ROTH:** This shift leaves the pathologist trained in classical methods stranded on progressively downgraded terrain. His demonstrations of morbid anatomy, his brilliantly performed necropsies, his multi-colored microscopic sections are looked upon more and more with polite boredom.

**DR. GRANT:** *What can he do about it?*

**DR. ROTH:** Those who have seen the handwriting on the wall and have ventured into the clinical laboratory, find a confusing array of sensitive instruments and complex analyses, unknown only a short time ago. Pathologists often find, while attempting to gain competence in one or two areas in this confusing new environment, that too many other areas exist to cover them adequately.

**DR. GRANT:** *It sounds discouraging. How can the hospital laboratories get good professional service?*

**DR. ROTH:** There are two possible solutions to the problem. The first is to find specialists to supervise the more complex area of laboratory endeavor. The second is to restrict laboratory services in an institution to a manageable size. Outside, strategically located consulting laboratories will have to supply the missing services.

**DR. GRANT:** *What kind of outside service do you have in mind?*

**DR. ROTH:** For example, virus isolation and identification is complex and of increasing importance.

**DR. GRANT:** *How are hospital laboratories changing?*

**DR. ROTH:** In many hospital laboratories, segmentation is taking place. Separate units are being attached to clinical departments and staffed by technical specialists. They are responsible to the chairman of the particular clinical department to which they are attached. Such chairmen are often well established investigators and experimentalists who emphasize the compelling importance of research in the medical establishment today.

**DR. GRANT:** *And the traditionally trained pathologist—what of him?*

**DR. ROTH:** While it is painful for the trained pathologist to see all that he has so laboriously learned becoming somewhat archaic and useless, this is characteristic of the times we live in. It seems that the man who, after a lifetime of study, has finally produced a better mousetrap now is liable to be confronted with a completely new gimmick that applies birth control to the mouse world, completely eliminating the problem for which he had a solution.

**DR. GRANT:** *What are the results of this accelerated obsolescence of pathologists?*

**DR. ROTH:** The classical pathologist is no longer prominent in the institutions; a downgraded necropsy service and a surgical pathology service is all that remains. Even surgical pathology is being nibbled away by specialists with concentrated experience in their particular fields, such as cytology, hematology, gynecology, oncology, etc.

**DR. GRANT:** *What is to become of these pathologists?*

**DR. ROTH:** They will probably disappear as an identifiable group. Already the chair of pathology at many medical colleges is held by specialists with research experience in fields other than pathology itself. Experimental pathology is, after all, an activity in which all disciplines and specialties participate.

**DR. GRANT:** *What about the clinical laboratory facilities?*

**DR. ROTH:** Some of these are directed today not by M.D. pathologists but by specialists with Ph.D. degrees. As the laboratory activities become more and more complex, the need for such highly specialized men in supervisory roles will grow.

**DR. GRANT:** *What do you envision for future pathologists?*

**DR. ROTH:** In the future the pathologist will probably be a specialist with an advanced academic degree, not necessarily an M.D., and will be in charge of a relatively small and specialized unit, possessing batteries of complex analytical instruments, and attached to a clinical department, the over-all chief of which will be a clinician with thorough training in clinical and experimental research.

**DR. GRANT:** *What about the small hospital?*

**DR. ROTH:** The hospital too small to permit such an establishment will probably become an annex of the nearest hospital center, with a close network of communications and liaison designed to provide the most up-to-date service to the patients.

**DR. GRANT:** *One final question. Is all this good or bad?*

**DR. ROTH:** Of course it will be for the good, but I cannot help but feel that the fullest expression of the physician in pathology is to be found in the necropsy room, where the totality of disease rather than components of it may be contemplated.

## NEWS and NOTES

● A program similar to those in other states [*California, Kentucky*—Ed.] to curb any harmful method of cancer treatment was adopted by the Nevada legislature in 1960. A Cancer Advisory Council, under the chairmanship of Dr. John W. Callister, was created by the bill. The Council held its fourth meeting in February of this year, at which time ways and means of investigating alleged cancer cures were adopted. Also studied were methods of disseminating information throughout the state of activities of the Council and Department of Health in regard to this program. In the near future a brochure will be prepared, which will discuss how families and individuals may report cases of suspected quackery that could be investigated by this group of professional men.

● The Audio-Digest Foundation, a nonprofit subsidiary of the California Medical Association, announces the availability of 16 tape recordings relating to the subject of cancer.

Titles of the tape recordings and their catalogue numbers are as follows: Medical Complications of Malignant Disease (IM-5-19); The Needle Biopsy —When and Why? (IM-6-18); Pelvic Cancer (Ob-Gyn-5-8); Modern Management of Gynecologic Cancer (Ob-Gyn-7-4); Invasive Lesions of the Uterus—Benign and Malignant (Ob-Gyn-7-16); Carcinoma of the Thyroid Gland (S-5-8); Treatment of Metastatic Breast Cancer (GP-7-4); Carcinoma of

the Colon and Rectum and Factors Influencing the Spread of Cancer (S-4-23); The Treatment of Carcinoma of the Breast (S-5-12); The Problem of Anemia in Cancer—Part I. Mechanisms and Recognition (S-6-23); The Problem of Anemia in Cancer—Part II. Treatment (S-6-24); Cancer of the Colon (S-7-7); Factors Influencing Spread of Cancer (Ob-Gyn-3-10); Adjuventive Management of Advanced Malignant Disease (S-7-11); Community Aspects of the Care of the Cancer Patient (N-OG-5); and Cancer of the Stomach (S-7-23).

Further information can be obtained by writing to the Audio-Digest Foundation, 1919 Wilshire Boulevard, Los Angeles 57, California.

● The public education program to get women in for annual pelvic examinations has proved its worth in a four-year screening program among women in the Columbus, Ohio area. Dr. John C. Ullery, Professor and Chairman of the Department of Obstetrics and Gynecology at Ohio State University, College of Medicine, reported to the annual Obstetrical and Gynecological Assembly of Southern California that after screening 112,000 women over a four-year period, 512 cases of pelvic cancer were detected. Of these 512 cases detected, 72% were unsuspected.

The Ohio program provided for an initial pelvic examination, and subsequent annual checkups for three years. Vaginal aspirations were used for

screening; biopsy, for diagnosis. Dr. Ullery stated that cervical scraping should be included in the examination because 22 malignancies were found by scraping that had been missed by vaginal aspirations.

- Bilateral radical dissection of the neck may offer one third of the patients with bilateral cervical metastasis from an intraoral or laryngeal carcinoma a chance for five-year survival.

At the Central Surgical Association's meeting in St. Louis, Missouri Feb. 16-18, Dr. Oliver H. Beahrs (Mayo Clinic and Foundation) reported that from 1951 to 1958 bilateral radical neck dissection was employed for patients who previously were considered inoperable, due to such extensive involvement. As a result of this operation, 32% achieved a five-year survival, and 41%, a three and one-half year survival.

Regarding these results, Dr. Beahrs stated, "These statistics are especially important in view of the fact that 90% had node metastasis."

- By using a combination of hyperthermia and hypothermia, surgeons may now be able to administer anticancer chemotherapeutic agents in regional perfusions more effectively. At a meeting of the Society of University Surgeons held in Kansas City, Kansas, February 9-11, 1961, Drs. William W. Shingleton and Roy T. Parker (Duke University, School of Medicine) reported that they began using this technique after experimental observations indicated that tissue uptake of alkylating agents is diminished by hypothermia and increased by hyperthermia. Translating this observation into prac-

tical terms, they found that by warming the perfused area to 38-39°C by means of a Harrison-Brown heat exchanger, it was possible to potentiate the action of the drugs and deliver dosages that exceeded about three to four times the safe systemic levels. To protect the patient from drug toxicity, they maintained the patient's body temperature at 31-32° C.

Of 25 patients with advanced abdominal and pelvic cancer who were treated with this combination therapy, most were relieved of pain and some had a reduction in tumor size. No deaths due to leukopenia occurred. However, both Drs. Shingleton and Parker emphasized that "sufficient cases of similar tumor type and extent of disease are not yet available for full evaluation of the procedure."

- In an editorial published in the January 16th issue of the *American Journal of Roentgenology, Radium Therapy and Nuclear Medicine*, Dr. Traian Leucutia warns of the risk of intravenous pyelography in patients with multiple myeloma because of the possibility of producing obstructive uropathy due to precipitation of abnormal protein within the renal tubule.

He recommends the following precaution: "Intravenous pyelography should not be performed in frank cases of multiple myeloma for any reason. In the case of occult cases of multiple myeloma, a diligent search should be made for protein abnormalities by electrophoretic studies of the blood serum and urine and, if their presence is demonstrated, intravenous pyelography should be omitted."

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In 1961, 788,000 Americans will be under medical care for cancer—510,000 new cases will be diagnosed.

1961 Cancer Facts and Figures. New York, N. Y. American Cancer Society, Inc. 1961.

## NOW HEAR THIS

*"The extreme philosophies of the inexperienced, which are based on the behavior of cancer at either end of the normal distribution curve, lead to the nihilistic attitude that all cancer is hopeless, or to the equally unrealistic position that the cancer patient can be salvaged by almost any minor procedure. The constant reiteration of these fallacious principles in the literature and in training centers has done the cancer patient a great disservice."*

- WHO:** Dr. Theodore R. Miller, President of the American Radium Society.
- WHERE:** San Juan, Puerto Rico. March 17-19, 1960. Presidential address, Forty-second Annual Meeting of the American Radium Society.

*"I have never seen a man who died of either squamous or oat-cell or undifferentiated carcinoma of the lung who has not been a smoker. I have made that statement throughout the country at every medical meeting where I have presented a paper and have challenged the audience to present such a case. I have been challenged, but in each instance unsuccessfully. Until this moment, I haven't seen such a case nor has anyone been able to show me one."*

- WHO:** Dr. Oscar Auerbach, Chief of Laboratory Service, Veterans Administration Hospital, East Orange, New Jersey.
- WHERE:** New Jersey. February 14, 1961. Bergen County Medical Society Meeting.

*"Certain tumors in animals are 100% fatal without treatment—with chemotherapy, 15% survive—with X-ray or surgical treatment, 30% survive. Chemotherapy combined with surgical treatment permits over 70% of the animals to live. Our hope is to do as well for human cancer."*

- WHO:** Dr. George E. Moore, Director, Roswell Park Memorial Institute, Buffalo, New York.
- WHERE:** St. Petersburg, Florida. March 18, 1961. American Cancer Society's 1961 Science Writers Seminar.

*"One hundred million dollars are spent each year by unsuspecting people on quack cancer cures. Coexisting in our society with legitimate medical care is a growing quasi-medical underworld which grosses each year from its victims a sum equal to one third to one half of the annual sales of legitimate manufacturers of ethical drug products."*

**WHO:** Dr. Austin Smith, President of the Pharmaceutical Manufacturers Association.

**WHERE:** New York, N. Y. December 12, 1960. Annual Eastern Regional Meeting, Pharmaceutical Manufacturers Association.

*"From the practical point of view, the use of radioactive cobalt in nylon sutures sewn in cancer of the bladder gives the same percentage of cure as does surgery with the advantage that the patient is left with a normal bladder and a normal urinary tract (75% of the patients so treated have been cured)."*

**WHO:** Dr. Vincent Vermooten, Assistant Professor of Urology, University of Texas, Southwestern Medical School.

**WHERE:** Orlando, Florida. Nov. 16, 1960. Southwestern States 1960 Cancer Seminar.

*"The average urologist in private practice, in spite of diligent examination of his own and referred patients, seldom sees more than three to four operable prostatic cancers in a year. And this also is part of the enigma: We have a common malignant disease for which we know the cure, but for which we seldom have a chance even to try. This situation, upon reflection, resembles the state of carcinoma of the cervix some 30 to 40 years ago. Unfortunately, no clubs have been organized among elderly men to have a yearly 'cancer check' of their genital organs."*

**WHO:** Dr. James F. O'Malley, Department of Urology, St. Joseph's Hospital, Kansas City, Missouri.

**WHERE:** St. Louis, Missouri. Oct. 31 to Nov. 3, 1960. Fifty-fourth Annual Meeting, Section on Urology, Southern Medical Association.

*"Our findings during second-look procedures have taught us that earlier operations were not radical enough. Our conversion rate is about 10 per cent."*

**WHO:** Dr. Owen H. Wangensteen, Professor and Chairman of the Department of Surgery, University of Minnesota, School of Medicine.

**WHERE:** Miami Beach, Fla. March 6 9, 1961. Twenty-ninth Annual Assembly, Southeastern Surgical Congress.

# CANCER AROUND THE WORLD

## Eighth International Cancer Congress

Plans and arrangements are advancing for the Eighth International Cancer Congress which will be held on July 22-28, 1962, in Moscow, under the auspices of the International Union Against Cancer. The meetings will take place at the Moscow State University.

A National Organizing Committee, established by the Ministry of Health of the U. S. S. R. and the Academy of Medical Sciences of the U. S. S. R., is carrying out the preparatory work for the Congress, and has recently issued the following preliminary information concerning the Congress.

### Scientific Program

#### LECTURES

The topics selected for lectures are: The role of viruses in the origin of cancer; biochemistry of cancer; tumor biology; experimental research and clinical oncology; new methods of cancer therapy; radical cancer surgery; new methods in radiotherapy; and cancer control.

#### PANEL DISCUSSIONS

There will be 15 panel discussions on the following topics: Viruses in oncology; immunology and genetics of tumors; biochemistry of cancer and carcinogenesis; biology of tumor cells; epidemiological studies on cancer; tumor-host relationships and hormone status; occupational cancer; etiology and pathogenesis of liver cancer; precancerous lesions; cancer deaths; biologic approach to cancer surgery; supervoltage and high energy radiation therapy; chemotherapy; care of advanced cancer patients; and cancer education.

#### SECTION MEETINGS

Invited speakers will give 10-minute papers devoted to such topics as: The role of viruses in the origin of cancer; tumor immunology; biochemistry of cancer; biology of the cancer cell; carcinogenesis; application of research to clinical oncology; tumor-host relationships; precancerous lesions; radiobiology; geographical pathology; carcinoma of the stomach; carcinoma of the lung; carcinoma of the ovaries; carcinoma in situ of the cervix; new methods of cancer therapy; long-term results in therapy of cancer; care of patients with advanced cancer; and cancer control.

### Enrollment

To be enrolled as a member of the Congress, a person must belong to some recognized scientific or medical organization or be recommended by such a body. Members of their families may be enrolled as associates. All registration

applications (Form 1) must be returned to the National Organizing Committee before April 1, 1962, and registration fees which are \$30.00 for a member and \$15.00 for an associate must be sent before April 1, 1962 to the Vneshtorgbank of the U. S. S. R., account N 0500104. After April 1, 1962, the fee will be \$40.00.

#### **Applications for the Reading of Papers**

Applications to read papers at various meetings will be accepted by the National Organizing Committee; however, the papers must be concerned with matters included in the scientific program. This application (Form 2) can be requested at the same time that application for registration is made. Those wishing to read papers must return the form to the National Organizing Committee by November 1, 1961.

#### **Accommodations**

All foreign members of the Congress will be serviced by the Russian Travel Agency "Intourist." In the United States of America, The American Express Company, 65 Broadway, New York 16, N. Y., has been appointed to act for the "Intourist" agency. Visas and payment of charges, etc., can be arranged through this agency. Accommodations available are: Deluxe which costs about \$35.00 per day per person; 1st class, \$6.50 to \$8.00 per day; 2nd class, \$5.50 per day, and students' hostels which cost about \$4.00 per day.

#### **Exhibitions and Films**

During the Congress there will be an exhibition in the University building, and films which are devoted to various aspects of study and cure of malignant tumors and cancer control will be shown. Members wishing to offer films should apply for Form 3 from the National Organizing Committee.

#### **Tours in the U. S. S. R.**

While the Congress is in session, sightseeing tours of Moscow and vicinity will be arranged for the wives and associates of members, and after the Congress, "Intourist" agencies will offer tours for members and their associates to various cities in Russia, including Leningrad, Kiev, Sukhumi and Tbilisi. Visits to resorts on the Black Sea Coast in the Crimea (Yalta) and the Caucasus (Sochi) also can be arranged.

#### **Publication of Proceedings**

Proceedings of the Congress will be published in both English and French in *Acta Union Internationalis Contra Cancrum*, a journal of the International Union Against Cancer.

#### **Correspondence**

For further information concerning the Congress as well as for the application for registration (Form 1), the application to read a paper (Form 2), and the application to show a film (Form 3), write to: National Organizing Committee of the Eighth International Cancer Congress, General Secretary of the Soviet National Organizing Committee, Prof. L. Shabad or Assistant General Secretary, Dr. N. Perevodchikova, Academy of Medical Sciences of the U. S. S. R., 14, Solyanka, Moscow, U. S. S. R.

# *Looking at Cancer*

A Journal of the American Cancer Society



J. B. LIPPINCOTT COMPANY  
PHILADELPHIA

A commentary on the May-June, 1961 issue  
of CANCER, a journal of the American Cancer  
Society, Inc.

**John W. Berg, M.D.**  
**Associate Editor, Cancer**

Radiation therapy often can provide essentially complete palliation for patients with cerebral metastases, according to Chu and Hilaris. They report on a 4 1/4 year experience with 218 patients. Whole brain irradiation was used because of the frequency of multiple lesions even in patients with completely focal clinical signs. The scheduled dose usually was 3,000 rad. Almost 80% of the 158 patients completing this course were considered to have derived major benefit from this therapy. The majority died of other metastases without recurrence of brain symptoms. Side effects were mild and few. Significantly poorer results were noted when less than 2,700 rad were given. In a few cases recurrent symptoms were treated by second and even third courses without untoward effect. Second courses produced about the same remission rate as had first courses.

Arthur Purdy Stout, with a number of co-authors, has prepared a series of papers on connective tissue tumors in childhood. Glomus tumors, myxomas, histiocytic tumors, including fibrous xanthomas and malignant mesenchymomas are considered in this article. Glomus tumors were relatively uncommon, but multiple ones occurred 10 times more frequently in children than in adults. There were no malignant transformations. Myxomas were widely distributed in soft tissues, viscera and bone. A 31% recurrence rate after excision shows that the usual apparent encapsulation was misleading to the surgeons. Radiation was of no use in control, but surgery when eventually adequate, brought control in all cases. None of the tumors metastasized. Three of 14 solitary histiocytomas and one of 24 fibrous xanthomas were clinically malignant and five more of the latter group were histologically so. Again benign varieties tended to recur because of too conservative excision. The final group included 42 sarcomas composed of multiple cell types. The largest number occurred in children under the age of five. All fatalities occurred in the instances in which the tumors had been allowed to grow larger than 5 cm before treatment.

Daniel and Brunschwig report that recurrent cervix cancer can be managed by aggressive surgical therapy regardless of the type of previous ineffective treatment. Supplementing their previous reports on the salvage of radiation failures, they now present the management of failures of total hysterectomy. Seventy-eight patients were seen, most of them after radiation had failed to control the recurrences. Of these, 36 underwent "curative" reoperation and half of this group, or 22% of all women seen, were living and well five years later. Most patients required removal of the bladder and/or rectum, but the five-year results show that this can be a worthwhile procedure.

Goodner, Berg and Watson have summarized the Memorial Hospital (N. Y.) experience with the so-called bronchial "adenomas." They discredit the myth that these are benign tumors and can be treated as such. As in other series, the majority of tumors were carcinoids. Twelve of 27 have metastasized (44%), and only 43% of the 21 patients eligible for five-year follow-up have survived that long. Only one of 27 patients was apparently cured by intrabronchial therapy; segmental excision appeared to be the treatment of choice. One patient was well six years after lobectomy despite a regional node metastasis. The few cylindromas were equally aggressive; three of five caused death within five years.

The osteogenic sarcomas that arise in Paget's disease of bone usually are considered the most lethal of complications that can exist in human disease. Series after series have reported no five-year survivors. It is therefore heartening that Schatzki and Dudley (Massachusetts General Hospital) have been able to add three apparent cures to the four previously reported from other centers. Radical surgery appeared to be the treatment of choice.

The mechanism of viral carcinogenesis is far clearer on the basis of a report by Leuchtenberger, Leuchtenberger, Stewart and Eddy. They have found that in mouse kidney two effects of polyoma virus infection are easily separable because they occur in different tissues. On the one hand, there is the usual viral infection with intracellular proliferation that leads to cell disintegration. On the other hand, there is cell growth and division with tumor formation unassociated with any demonstrable viral growth. The two processes appear mutually exclusive even when they occur in the same tissue, such as in the epidermis. Viral multiplication precedes tumor formation and may disappear before much tumor growth has occurred. Hence the usual failure to find a virus in tumors.

Fisher and Fisher continue their investigation of the factors underlying metastatic tumor growth. In this article they show that the growth of liver metastases is closely related to the amounts of protein and fat available in that organ.

Tolles and his co-workers measured about 150,000 exfoliated cells on cervical smears while gathering data for the construction of an automatic prescreening device. Their measurements showed what cytologists and pathologists have long believed: There is a gradual and continuous change between benign and malignant cell populations, not a sharp discontinuous one. This finding makes automation difficult and points up the irreducible problem inherent in any type of diagnostic effort, human as well as machine.

# cancer abstracts

## a glance ...

### Recent Developments in Cancer Research

During the past 10 to 15 years cancer research has been accelerated in tempo and activity and has become a vigorous, comprehensive operation. Significant results have been achieved which are exciting in their implications of progress still to come. There are already heartening signs that the secrets of cancer are gradually being exposed. At the present time, the areas of particular interest and promise are virology, chemotherapy and cytology.

Much information has been accumulating about animal tumor viruses and the nature of viruses and cell components. Recent studies point up the importance of viruses as causative agents in animal tumors and successful attempts have been made to develop vaccines to protect susceptible animals from virus-induced tumors. As yet, however, there is no evidence that any form of human cancer is caused by a virus, but the field holds much promise. If viruses are shown to be responsible for human cancers, investigators will have to find out if means can be developed to protect people from cancers.

Chemotherapy research is proceeding along several lines, such as the development of new classes of drugs, alteration of structure of drugs already known to have anticancer activity, and improvement in techniques for administering known drugs. Adrenal steroids, ACTH, antimetabolites, alkylating agents, radioactive isotopes and hormonal alterants are among the 20 or so established anticancer drugs that are temporarily effective in alleviating symptoms and prolonging useful lives of patients with about 15 types of cancer. Their successful use lends support to the theory that a drug or several drugs to cure cancer might be developed. The task now is to find really effective drugs that will attack cancer tissue wherever it may be in the body, and produce cures.

Past efforts to devise a general test for the diagnosis of cancer have been fruitless. However, a diagnostic research program is under way to attempt to develop one or more tests, such as blood or urine determinations, which would accurately indicate malignancy in asymptomatic patients. Already established as one of the most important achievements in cancer diagnosis is the

cytologic test for uterine cancer, a test based on a technique developed by Papanicolaou and Traut for detecting malignant cells in fluids taken from body orifices. Advances in cytology have already been made in the clinic, with the result that control of uterine cancer appears to be a possibility. Scientists are now studying the application of the cytologic technique to detection of cancer of other sites, and preliminary results, especially for cancers of the esophagus, stomach and colon, indicate a high degree of accuracy. Cytology is also contributing to our general knowledge of cancer. It is now known that cancer cells circulate in the peripheral blood before metastasis occurs, but the lack of quantitative methods for detecting malignant cells has prevented efforts to confirm this hypothesis and apply the findings to further studies of metastasis and diagnostic tests. A quantitative technique has now been developed for preparing human whole blood so that it can be examined cytologically for the presence of malignant and suspicious cells.

Increased effort is being made also in other research areas to disclose cancer-causing or cancer-potentiating agents in the environment, to develop new techniques and procedures, such as in tissue culture and biochemical approaches, and to elucidate the mechanisms of normal and cancerous growth.

Heller, J. R.: Recent developments in research on cancer. *Geriatrics* 15:1-10, Jan., 1960.

#### Disseminated Mammary Carcinoma

A joint committee of the American College of Physicians (Drs. William H. Baker, Olaf H. Pearson and Samuel G. Taylor, III) and the American College of Surgeons (Drs. Charles L. Eckert, Joseph H. Farrow and Ian Macdonald) evaluated the response of women with disseminated mammary carcinoma

to adrenalectomy or hypophysectomy. The records were reviewed by Dr. Charles Peslia and evaluated statistically by Stanley C. Harris, Ph.D.

Most of the women in both groups, prior to adrenalectomy or hypophysectomy had had breast surgery, local radiation, various hormones, including steroids, testosterone, estrogens, and oophorectomy either by radiation or surgical ablation.

Response to treatment was defined as a distinct decrease in at least one of the several areas involved by metastatic disease, as measured clinically and/or roentgenologically and of at least a six months duration. Also during this same time interval no new area of disease could have appeared. Of 315 cases who underwent adrenalectomy and survived the immediate postoperative period, 100 (31.7%) showed definite remissions. Of 358 cases who underwent hypophysectomy and survived the immediate postoperative period, 112 (31.3%) showed definite improvement. Thus, regardless of the technique used, response of a given number of patients seems to be the same. Since there are more general surgeons and urologists than there are neurosurgeons, it is obvious that adrenalectomy is the more feasible treatment in the country at large.

Anon.: *Adrenalectomy and hypophysectomy in disseminated mammary carcinoma; a preliminary statement by the joint committee on endocrine ablative procedures in disseminated mammary carcinoma.* *J.A.M.A.* 175:787-790, March 4, 1961.

#### Diagnosis of Kidney Cancer

Since early diagnosis of cancer of the kidney provides the best chance for cure, Drs. Evans, Halpern and Finby of the New York Hospital-Cornell Medical Center, analyzed 100 cases of the disease as to diagnostic procedures. Papillary lesions of the renal pelvis as well as Wilms' tumor of the kidney

were excluded from the study. Ninety-seven patients had hypernephroma, which is the usual type of renal cancer; two had lymphosarcoma; and one had a mucous adenocarcinoma. The diagnosis was established by renal biopsy, surgery, and/or autopsy. Eighty-four per cent of the patients were between 41 and 60, with a male to female ratio of two to one. Fifty-eight per cent of the patients had hematuria; 15 per cent showed a mass; and only 10 to 15 per cent showed a mass, hematuria and pain. Urines in 55 patients were studied by the Papanicolaou test and all were negative for malignant cells. The right and left kidneys were equally involved. In one third of the patients without symptoms, renal cancer was suspected by noting abnormal shadows during the course of other abdominal X-ray procedures. The excretory urograms and retrograde pyelograms showed some changes in over 90% of the patients studied. Either renal arteriography or nephrotomography are felt to be more accurate diagnostic procedures. The authors used the latter. In 94 per cent of cases an accurate differential diagnosis between renal cysts and cancer was accomplished by using nephrotomography, as compared to only a 50 per cent accuracy obtained by relying upon only excretory and retrograde pyelograms.

*Evans, J. A.; Halpern, M., and Finby, M.: Diagnosis of kidney cancer. J.A.M.A. 175:201-203, Jan. 21, 1961.*

#### The Value of Doing a Pap Smear in a Pregnant Woman

Routine Pap smears done in pregnant women have, at times, yielded atypical cells that are indistinguishable from those described as being diagnostic of carcinoma in situ of the cervix of nonpregnant women. Two schools of thought exist regarding these atypical

cells. One group believes they are due to the pregnancy per se and will disappear after delivery. This theory is supported by several studies done by Drs. Danforth and Epperson, and Drs. Nesbitt and Hellman.

The other school, represented by Drs. Greene and Peckham, as well as by the authors, Drs. Hill and Prystowsky, conclude on the basis of their series of cases, that the atypical epithelium persists after the pregnancy. The authors believe that since pregnancy does not exclude the possibility of carcinoma of the cervix, Pap smears should be done in pregnancy. If positive smears are obtained, then institution of proper treatment for cancer of the cervix is in order. As a side light, it should be noted that 752 punch biopsies of the cervix were done in 286 pregnant women with no abortions resulting.

*Hill, H. M., and Prystowsky, H.: The routine use of the Papanicolaou smear in pregnant women. South. M. J. 54:291-294, March, 1961.*

#### Prognosis in Cancer of the Breast

Drs. Gray, Skandalakis, Mitchell, Nicolson and McRae report on factors dealing with the survival of 298 women undergoing surgery for cancer of the breast at a private hospital in Atlanta, Georgia.

Duration of symptoms, prior to operation, was difficult to correlate with duration of survival, and/or size of the tumors. This difficulty was attributable to the nature of the disease and patients' lack of accurate recall in evaluating symptoms. (One exception exists in that tumors of the lower breast, being exposed to foundation garments, apparently produce symptoms more readily.)

They conclude that size of the tumor, as measured pathologically—not clinically—is a significant factor in survival. No patient alive and demonstra-

bly free of the disease for five years had a tumor over six centimeters. Of those dying within five years, a significant majority had tumors over four centimeters in size. Thus, when the tumor is less than four centimeters in size, the over-all prognosis of survival rates is about twice as good.

It is apparent that successful treatment of cancer of the breast depends on diagnosis of the tumor when it is early and small.

*Gray, S. W.; Skandalakis, J. E.; Mitchell, W. E.; Nicolson, W. P., Jr., and McRae, F. W.: Tumor size, duration of symptoms, and prognosis in carcinoma of the breast. Surgery 49:143-148, Feb., 1961.*

### Lobectomy in Bronchogenic Carcinoma

Lobectomy, either standard, radical, or with a sleeve resection of the main bronchus in the treatment of bronchogenic carcinoma, is theoretically supported by a sound pathologic basis as well as by good physiologic principles. To date the 5 year survival results in those patients for whom lobectomy has been selected as the definitive procedure are as good as those obtained in the patients in whom a pneumonectomy has been selected. Of course, it might always be said that the more favorable lesions selected for lobectomy would have yielded even better results if a pneumonectomy had been the operation. Such an argument could only be settled by random selection of one or the other operation in a large series of patients in whom either operation could be performed with near equal morbidity and mortality. This is a highly unlikely clinical situation. In lieu of such information and in the atmosphere of the persistent variance of opinion even among those who have extended the applicability of lobectomy by bronchoplastic procedures, when may the operation be reasonably ap-

plied to the patients with lung cancer? From the studies reviewed it seems justified to conclude that lobectomy under certain circumstances is a satisfactory cancer operation and may be expected to yield good results in those patients in whom it is appropriately applied.

At the present time lobectomy is suggested (1) as a definitive procedure in all patients with peripherally located tumors with neither transgression of a fissure nor gross nodal involvement and for a well localized hilar carcinoma without nodal involvement when a sleeve resection (bronchoplastic procedure) will insure adequate removal of bronchial margin in patients with diminished pulmonary or cardiac reserve; (2) as a compromise procedure for a peripheral lesion with gross nodal involvement in patients of advanced age or with diminished reserves and for hilar carcinoma with gross nodal involvement when a sleeve resection is technically feasible in patients of advanced age or with poor reserves; and (3) as a palliative procedure when tumors cannot be completely removed but a lobectomy will result in relief of distressing symptomatology.

Lobectomy does not really compete with pneumonectomy as the operation of choice for the treatment of bronchial carcinoma, but should assume a place with it in the armamentarium of the surgeon treating this disease. The selection of lobectomy in the individual situation should be dependent upon the patient's physiologic status and the topographic extent of the tumor at the time of operation. Blind adherence to a dogma of any one operative approach is unjustified.

### —AUTHOR'S CONCLUSION

*Shields, T. W.: Lobectomy in the treatment of bronchogenic carcinoma. Internat. Abstr. Surg. In Surg. Gynec. & Obst. 112:1-8, Jan., 1961.*

*1961 Annual Meeting of the American Cancer Society, Inc.*

**SCIENTIFIC SESSION PROGRAM**

*Biltmore Hotel, New York, October 23-24, 1961*

**THE PHYSICIAN AND THE TOTAL CARE OF THE CANCER PATIENT**

**MONDAY, October 23, 1961**

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**Morning Session—9:00-12:00 Noon**

**DECISIONS IN THE EARLY CARE  
OF THE CANCER PATIENT**

*Chairman: DR. I. S. RAVDIN  
University of Pennsylvania  
Philadelphia, Pennsylvania*

**Uterus**

*DR. JOHN L. MCKELVEY  
University of Minnesota  
Minneapolis, Minnesota*

**Colon and Rectum**

*DR. J. ENGLEBERT DUNPHY  
University of Oregon  
Portland, Oregon*

**Lung**

*DR. ALTON OCHSNER  
Ochsner Foundation Clinic  
New Orleans, Louisiana*

**Breast**

*DR. JOHN W. CLINE  
Stanford University  
San Francisco, California*

**Head and Neck**

*DR. EDGAR L. FRAZELL  
Memorial Hospital for  
Cancer and Allied Diseases  
New York, New York*

**Leukemia and Lymphomas**

*DR. LLOYD F. CRAVER  
Memorial Hospital for  
Cancer and Allied Diseases  
New York, New York*

**The Radiologist and the  
Care of Early Cancer**

*DR. THOMAS CARLILE  
The Mason Clinic  
Seattle, Washington*

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**Afternoon Session—1:30-4:30 P.M.**

**A. COUNSELLING THE CANCER  
PATIENT**

*Chairman: DR. MURRAY COPELAND  
M. D. Anderson Hospital  
and Tumor Institute  
Houston, Texas*

**General Practitioner's Opinion**

*DR. JOHN G. WALSH  
American Academy of General  
Practice  
Sacramento, California*

**Surgeon's Opinion**

*DR. GEORGE T. PACK  
Memorial Hospital for Cancer  
and Allied Diseases  
New York, New York*

**Radiologist's Opinion**

*DR. EUGENE P. PENDERGRASS  
University of Pennsylvania  
Philadelphia, Pennsylvania*

**Internist's Opinion**

*DR. SAMUEL G. TAYLOR, III  
University of Illinois  
Chicago, Illinois*

**B. WHAT THE CANCER PATIENT  
SHOULD BE TOLD ABOUT HIS  
DIAGNOSIS AND PROGNOSIS**

**Psychiatrist's Opinion**

*DR. WILLIAM GREENE  
University of Rochester  
Rochester, New York*

**Psychiatrist's Opinion**

*DR. DONALD OKEN  
Michael Reese Hospital and  
Medical Center  
Chicago, Illinois*

**Surgeon's Opinion**

*DR. OWEN H. WANGENSTEEN  
University of Minnesota  
Minneapolis, Minnesota*

**Pastor's Opinion**

*DR. GRANGER E. WESTBERG  
University of Chicago  
Chicago, Illinois*

**TUESDAY, October 24, 1961**

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**Morning Session—9:00-12:00 Noon**

**CARE OF THE ADVANCED  
CANCER PATIENT**

*Chairman: DR. WARREN H. COLE  
University of Illinois  
Chicago, Illinois*

**Role of Radical Surgery**

*DR. EUGENE M. BRICKER  
Washington University  
St. Louis, Missouri*

**Role of Chemotherapy—Systemic**

*DR. ANTHONY R. CURRERI  
University of Wisconsin  
Madison, Wisconsin*

**Role of Chemotherapy—Perfusion**

*DR. JOHN S. STEHLIN, JR.  
University of Texas  
Houston, Texas*

**Role of Radiation**

*DR. JAMES J. NICKSON  
Memorial Hospital for Cancer and  
Allied Diseases  
New York, New York*

**Nutritional Care in Advanced Cancer**

*DR. DONALD M. WATKIN  
Pan American Health Organization  
Mexico City, D. F.*

**Pain Control**

*DR. JAY J. JACOBY  
Marquette University  
Milwaukee, Wisconsin*

**Rationale for Aggressive and  
Extraordinary Means of Treatment of  
Advanced Cancer**

*DR. DAVID A. KARNOFSKY  
Sloan-Kettering Institute for  
Cancer Research  
New York, New York*

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**Afternoon Session—1:00-3:30 P.M.**

**SOCIETY'S ROLE IN CARING FOR  
THE CANCER PATIENT**

*Chairman:  
DR. JOHN S. HIRSCHBOECK  
Marquette University  
Milwaukee, Wisconsin*

**Medical Care and the Cancer Patient**

*DR. GEORGE G. READER  
New York Hospital—Cornell  
Medical Center  
New York, New York*

**Financial Cost of Caring for the  
Cancer Patient**

*DR. DAVID B. ALLMAN  
Atlantic City, New Jersey*

**The Role of Supporting Services in  
Caring for the Cancer Patient**

*MISS EDNA NICHOLSON  
Institute of Medicine  
Chicago, Illinois*

**Treatment of Cancer in Home Care  
Programs**

*DR. I. ROSSMAN  
Montefiore Hospital  
New York, New York*

**Service Program of the  
American Cancer Society**

*DR. JOHN F. W. KING  
American Cancer Society, Inc.  
New York, New York*

**The Human Side of Caring for the  
Cancer Patient**

*MR. RICHARD L. EVANS  
Salt Lake City, Utah*

**nothing  
more  
can be  
done**

Probably no more important decisions are made or more significant words uttered in medical practice than those which indicate that medical science offers no further help or hope to the victim of an illness. This is a decision which most physicians are called upon repeatedly to make.

The highest level of judgment in human endeavor is called for and the physician needs his maximum skills in the art and science of medicine in this role. A life may be saved, untold suffering may be prevented, or the reverse may be the result of his judgment. If the physician is backed up by thorough and up-to-date information on the disease, and has full knowledge of his patient, the right answer will be forthcoming. By considering what more *can* be done rather than whether more *should* be done, he will remain factual and be concerned with questions which he as a physician is qualified to answer.

A major problem for the physician is having the broad factual knowledge

necessary for making such important determinations in the various diseases he encounters. It is especially so in cancer, which is so variable in its course and in which so many new developments are constantly taking place. A physician may ill-advisedly inform a cancer patient or his family by word or by action that nothing more can be done, when this is not true. It seldom is. Many such patients live on to appear as testimonial claims of irregular practitioners who thrive on the abandoned patients of regular practitioners. Like floating mines in peacetime seas, such "lost" patients are examples of man's inhumanity to man, as well as potential sources of trouble for the practitioner and his profession as a whole.

When all therapeutic bolts have been shot by the various specialists, and the cancer patient still lives on with uncontrolled disease, which specialty takes responsibility for him? Who keeps him from becoming "lost"? Any practicing physician with sufficient interest can provide for the total and continued care which the advanced cancer patient so desperately needs. By rising to this challenge, the physician is given his finest opportunity to exhibit the quality of humanity which is the backbone of his profession.

*Ronald M. Grant*



In 1961, you, the nation's physicians, will diagnose an estimated 70,000 cases of cancer of the colon and rectum.

Although potentially this is a highly curable cancer, each year more than two thirds of such patients die of the disease. Thousands are lost needlessly.

They could be saved by proper medical treatment of the disease, found by annual examination, in its presymptomatic and most curable stage. The regular health checkup and alertness to first symptoms are great life-savers.

To help bring such patients to you *in time*, the American Cancer Society has developed a forceful, comprehensive public education program on cancer of the colon and rectum.

The Society's newest film, *Life Story* dramatizes for the public the importance of the inclusion of digital and

## **PROCTOSCOPIC EXAMINATIONS IN THE ANNUAL HEALTH CHECKUP.**

In this, as in the preparation of all of its life-saving educational materials, the Society is aided by the best medical and lay experts available.

The physician and the layman in the American Cancer Society are truly partners for life.



**AMERICAN  
CANCER  
SOCIETY**

